Enhancing Earned Value (EV) Analysis Using

Project Assessment & Reporting System (PARS II)



Presented by:

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Office of Acquisition and Project Management (APM) MA-60

U. S. Department of Energy

January 2013

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Agenda – Day 1



8:00 -	8:15	Welcome /	Intro
0.00	0.10		

8:15 - 9:15 PARS II Overview

9:15 - 9:30 Break

9:30 - 10:30 Project Lifecycle in PARS II

10:30 - 11:00 Dashboards

11:00 - 12:30 Lunch

12:30 – 1:00 **EVM** Overview

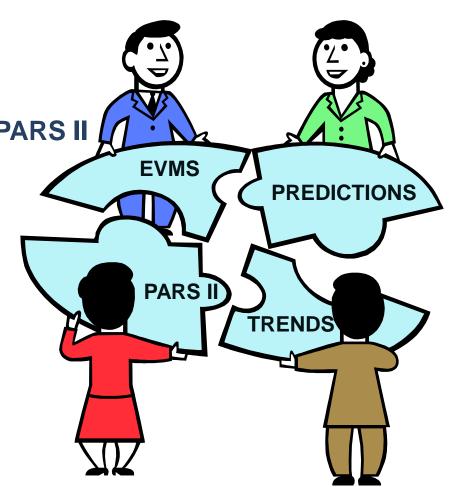
1:00 – 2:30 EVMS Surveillance

Process Part 1

2:30 - 2:45 Break

2:45 - 3:45 Process Part 2

3:45 – 4:30 EV Common Issues



Agenda – Day 2



8:00 - 9:00 Budget vs. Funds

9:00 - 9:15 Break

9:15 - 11:00 EV Data Analysis

11:00 - 12:30 Lunch

12:30 – 1:15 PARS II Assessment Roles

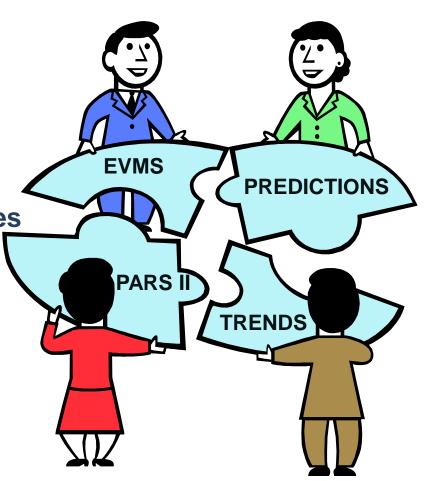
1:15 - 2:00 PARS II DepSec Monthly

Report

2:00 - 2:15 Break

2:15 - 2:45 PARS II Reporting

2:45 - 4:00 PARS II Wrap-Up



Before We Get Started



Materials

- Feedback Forms (Questions, Comments, Suggestions)
- Appendix see Slides 329-344
- Let's take a moment to get to know one another



Why are We Here?



- Share information relative to new and improved PARS II reports and EVMS surveillance and analysis processes
- Provide information to improve communication and proficiencies working with PARS II and Earned Value Management
- Provide a forum to exchange best practices concerning PARS II and EVMS procedures and implementation across the complex
- Who will benefit from this training?
 - Federal Project Directors (FPDs) and Contractor
 Project Managers with their respective project control staffs
 - DOE HQ Project Mgmt / APM
 - DOE HQ Project Mgmt Support Office (PMSO) staff

A Word from the Deputy Secretary



- Must not continue "Worst Practice" of breaching baselines with little
 to no forewarning Noted in April 11, 2012 meeting with Paul Bosco, Director, APM
- PARS II Data Quality Policy Memo dated June 19, 2012
 - Project cost and schedule performance needs to reflect reality
 - Early warning indicators essential
 - Need monthly EACs including a separate FPD Forecast TPC
 - » FPD's best estimate of final total project cost (i.e. AC + to-go costs + expected REA costs + fee + ODCs + trends + change orders; FPD's view as Govt. rep independent of contractor EAC; not same as approved TPC
 - EVMS gamesmanship not tolerated
 - Contractor accountable for timely, accurate, reliable and actionable project and contractor cost, schedule, performance, risk, and forecast data, reports and information
 - Federal project team accountable for oversight and validation
 - COs should incentivize the appropriate behavior relative to project data
 - Restructuring cost and fee arrangements, when appropriate, upon receipt of significant baseline change proposals

http://energy.gov/management/office-management/operational-management/project-management/policy-and-guidance

PARS II Overview



PARS II Course Outline



- Account Access
- System Requirements
- Modules
 - Oversight and Assessment
 - Project Performance Module
 - Administration Module
 - All Reports
- Find/Search for a Project
- Project Lifecycle in PARS II
- Monthly Process
- Dashboards

- Assessment Roles
 - \circ **FPD**
 - O PMSO
 - APM (MA-60)
- Monthly Report and Metrics
- SSS Reports
 - Standard
 - Custom
- Future Release Changes
- PARS II Help Desk

Welcome to PARS II





Project Assessment and Reporting System (PARS II)

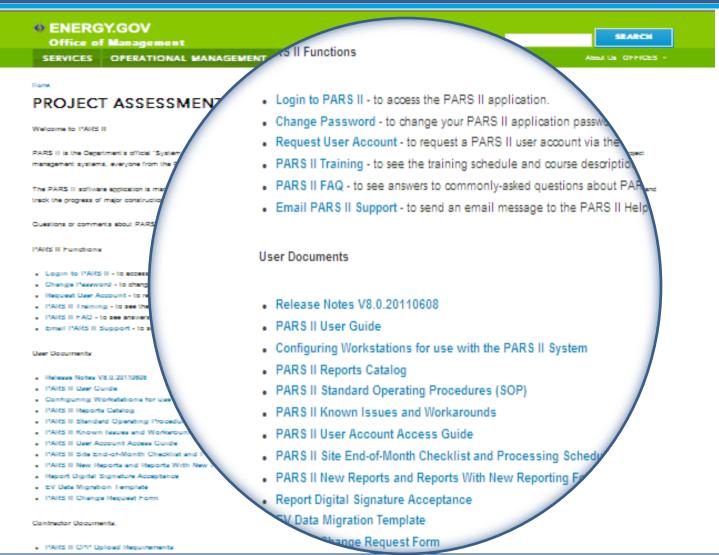
V8.0.20120308

- PARS II is the Department's official "System of Record" for capital asset project performance information. PARS II uses the same data as maintained in our contractors' project management systems, so everyone from the Federal Project Director's staff to the Secretary of Energy will have easy access to the same data.
- The PARS II software application is managed by the MA Office of Acquisition and Project Management (APM) MA-60 and is used by federal and contractor personnel across the nation to record and track the progress of capital asset projects.
- Deployed in October 2010, the goal of this system is to provide accurate, timely, complete, and verifiable project performance data. The system provides greater transparency on the performance of specific projects, and facilitates the efforts of project analysts to analyze, track, and validate the data.

PARS II Documentation



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http://energy.gov/management/project-assessment-and-reporting-system-pars-ii

Request for PARS II Account / Project Access



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ENERGY.GOV

Office of Management

SERVICES

OPERATIONAL MANAGEMENT

MISSION



U.S Department of Energy Headquarters

Management Information Systems Application Gateway

PARS II ACCOUNT ACCESS REQUEST

LOGIN
REQUEST ACCESS
ABOUT MIS GATEWAY
HELP

The account access process for PARS II relies on the Department of Energy's MIS Application Gateway system to verify the requestor's identity and to approve his/her request for access to a specific DOE Headquarters application, such as PARS II. Once approved by the MIS Application Gateway, the PARS II Help Desk Administrator will assign a new PARS II account to the requestor.

REQUEST ACCESS TO PARS II PROJECTS

Users are granted access to projects based on the information supplied during the account creation process. However, should a User require additional access to projects after this process has been completed, a written request (email) from either the FPD of Record for a project or Program FPM is required to the PARS II System Administrator to grant additional project access.

PARS II PASSWORD REQUEST / RESETTING PASSWORD

If a User forgets his or her password, the PARS II Helpdesk can assist:

- Via email to I-Manage.Eas@hq.doe.gov;
- By phone at 301-903-2500 (option 4, then option 5); and
- By phone at 866-834-6246 (option 4, then option 5).

https://mis.doe.gov/portal/

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PARS II User Account Request





https://mis.doe.gov/

U.S Department of Energy Headquarters

Management Information Systems Application Gateway

SUBMIT

Help Line	Application Access Request - PARS II (PROD instance)
Email I-MANAGE HelpDesk@hq. doe. gov	Cree,Marc David (* - Required)
Phone HQ: 301-903-2500 Toll Free: 1-866-834-6246 Option #4, Option #5	Note: You can only select one Role Select User Role: User Roles Help (PDF) Contractor Project Analyst Federal Project Director / Deputy FPD
Contractor Project Analyst - Perform EV uploads. View Assigned Projects and Dashboards.	Program Manager / Analyst Program Office Support DOE Senior Executive / Management
FPD / DFPD - View Assigned Projects. Access to Dashboards and Reports Module. Perform FPD Monthly Assessments.	OECM Analyst / Alternate Analyst
PM / Analyst - View All Projects for Assigned Organization. Access to Dashboards and Reports Module. Perform Program Monthly Assessments.	• Select your Approving Official: Select your approving official NOTE: The DOE Project Number, also called the DOE Project ID, is the project's identification code as reported in the OMB A-11,
Program Office Support - View All Projects for Assigned Organization. Access to Dashboards and Reports Module.	Exhibit 300 or the program budget submission (e.g., 97-D-102). DOE Project Name(s) or Project Number(s): (* required for FPD / Deputy FPD and Contractor Project Analyst roles)
DOE Senior Exec - View All Projects for Assigned Organization. Access to Dashboards and Reports Module.	Requestor Comments:
APM Analyst - View and Edit Rights For All Projects Within the Portfolio. Should Only Be Selected If A Member Of APM.	* Please provide a Business reason supporting your need to access PARS II: For example, as an FPD I will use PARS II to analyze schedule and earned value project data.
Interested Party - View All Projects for Assigned Organization. Access to	

PARS II Passwords & Account Suspension



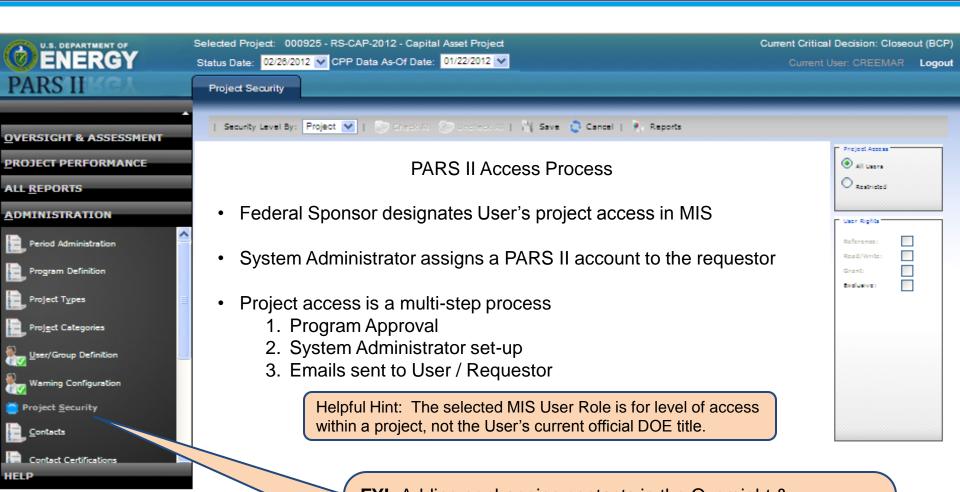
- PARS II User temporary Password must be activated within 7 Days
- PARS II Passwords must be reset by the User every 90 days
- In accordance with the DOE Security Plan, any PARS II account that has inactivity greater than 180 days will be suspended.
 - Users whose account may be suspended due to inactivity will be sent an email (URGENT – ACTION REQUIRED to Maintain PARS II Account)
 (5) five business days before suspension.
 - To remain active, Users must login to PARS II within the next seven (7) days.
 - If an account is suspended, Users will be required to follow the normal process of requesting a PARS II account via MIS.
 - This process is documented at:

http://www.management.energy.gov/documents/PARS_II_User_Account_Access_Guide.pdf

PARS II Access - Project Security



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FYI: Adding or changing contacts in the Oversight & assessment module **DOES NOT** change a Users security rights. The Administration Module – Project Security is not linked to the Oversight & Assessment Module Project Attributes / Project Contacts tab.

Configuring Workstations for PARS II



PARS II requires that a User's workstation be configured to ensure report accuracy. General instructions can be found at:

http://energy.gov/management/downloads/configuring-workstations-use-pars-ii-system

** Administrative Rights are required to perform the installation of the ActiveX Control or Trusted Publisher. **

PARS II HARDWARE, SOFTWARE AND NETWORK REQUIREMENTS

- Internet Explorer 7 (native mode)
- Internet Explorer 8 (native mode)
- Internet Explorer 9 (native mode or compatibility mode)
- Microsoft Excel 32-bit for 2003, 2007 and 2010 are supported spreadsheet applications
- Instructions are different for installing the ActiveX Control depending on the operating system Windows XP or Windows 7.
 - Configuring Workstations for use with the PARS II System, 6/27/2012, Section 1.2)
 http://energy.gov/management/downloads/configuring-workstations-use-pars-ii-system
- Set MS Office Macro Security to Allow Digitally Signed Content from Dekker LTD for Microsoft Excel 2007 or Microsoft Excel 2003.
 - Configuring Workstations for use with the PARS II System, 6/27/2012, Section 1.3)
 http://energy.gov/management/downloads/configuring-workstations-use-pars-ii-system

Helpful Hint: Make Sure you know the correct system platform and version of Microsoft Office installed on your workstation.

Helpful Hint: Perform the ActiveX Control installation before setting macros for Excel.

PARS II Browser Requirements









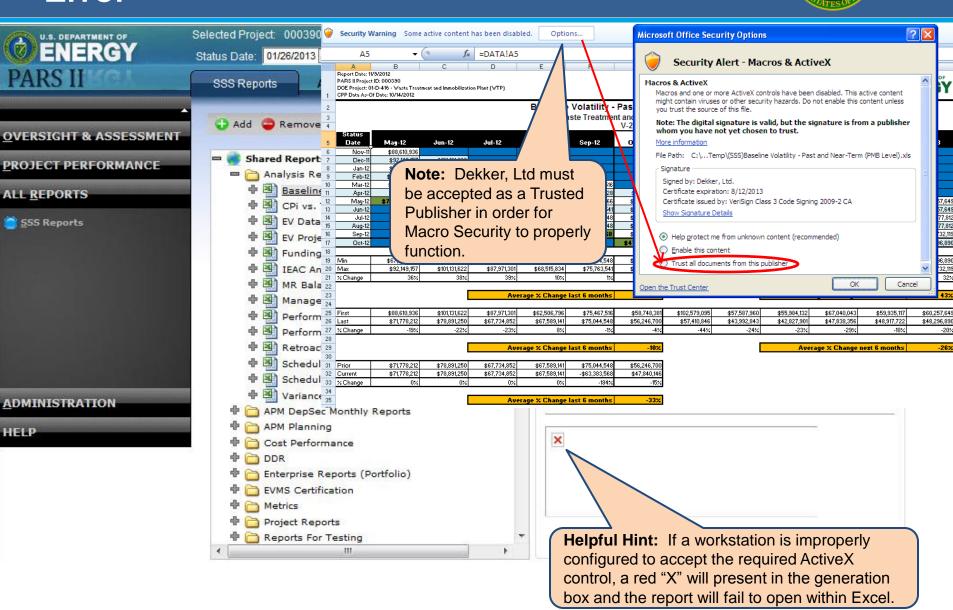






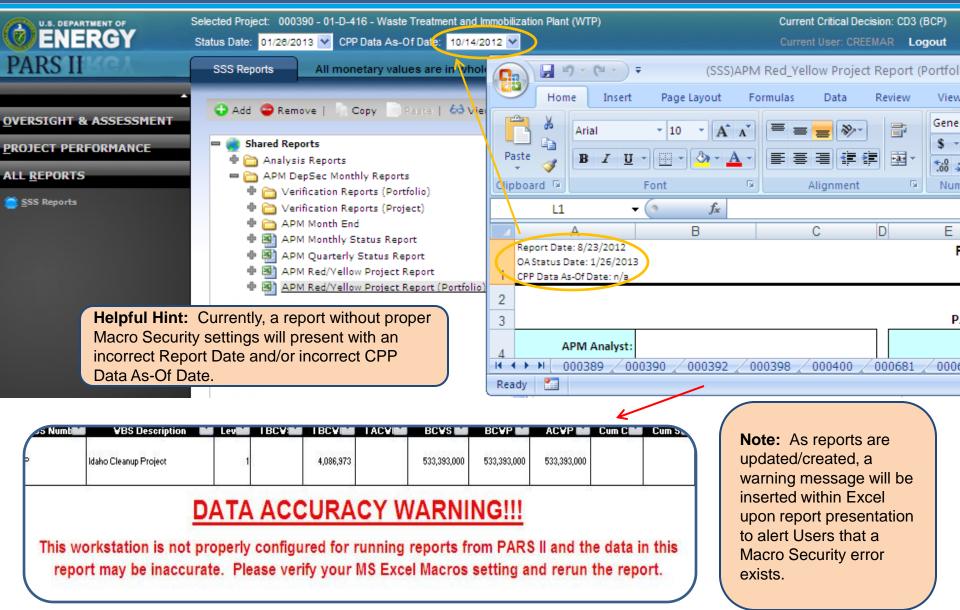
SSS Reports - ActiveX and Trusted Publisher Error





SSS Reports - Excel Macro Setting Error





PARS II Log-In: https://pars2.doe.gov



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Project Assessment and Reporting System (PARS II)

V8.0.20120308

Helpful Hint: If you miss type your password 3 times, wait 60 minutes and you will have 3 more tries.

This Screen Updated 5/21/2012

IMPORTANT NOTE

PARS II Version 8.0.20120308, released on May 19, 2012, has additional security features which prevents unsupported browsers Compatibility mode, Mozilla Firefox, Google Chrome and IE9 are no longer supported means for accessing PARS II. Internet Explousing an unsupported browser or browser mode, please contact your Network Administrator. Hardware, software and network reuse with PARS II can be found in the document at this link.

Did You Know?

You can easily see a list of every PARS II project to which you have access?

As soon as you log in to PARS II (from the Projects tab):

- Click on the Find icon on the left side of the PARS II icon bar.
- · A Search window will display which allows users to Search By different parameters.
- Single click the Clear icon to remove any previous search criteria that was typed into any field.
- . Single click the Search icon.
- After processing/loading, you will be returned to the Projects tab, with a complete list of all PARS II projects to which you have been granted
- If you wish to see a list of active PARS II projects to which you have been granted access, you may enter the word "Active" in the Project Active returned to the Projects tab with a complete list of all active projects to which you have been granted access.

Report Accuracy Warning!

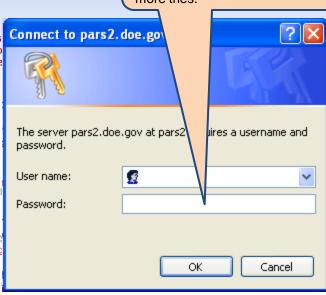
Users who require access to PARS II reports must ensure that their workstations are properly configured according to the PARS II requirements configured to PARS II requirements will produce accurate reports. Without this configuration, PARS II report information presented may be inacc

Security Notice

This web site is part of a Federal computer system used to accomplish Federal functions. The Department of Energy uses software programs to monitor this web protect information in the system. By accessing this web site, you are expressly consenting to these monitoring activities.

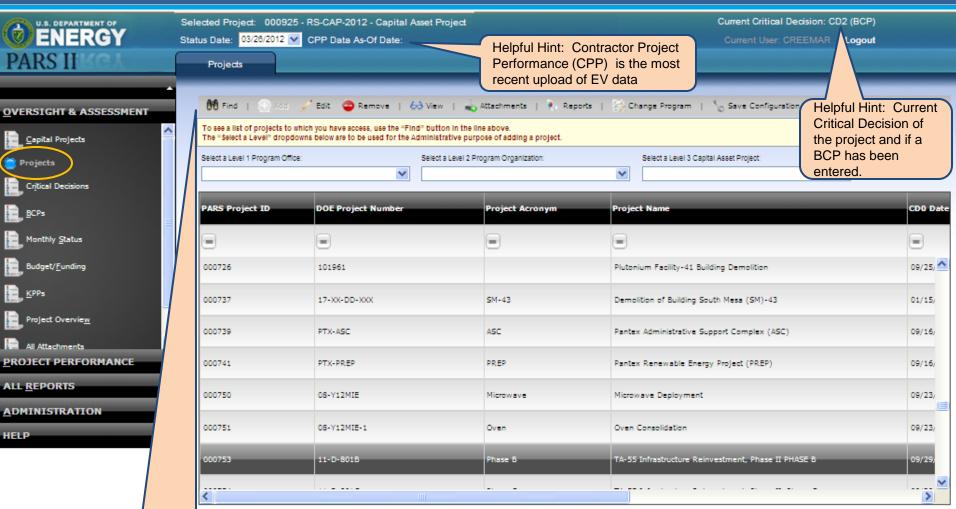
Unauthorized attempts to defeat or circumvent security features, to use the system for other than intended purposes, to deny service to authorized users, to access, obtain, alter, damage, or destroy information, or otherwise to interfere with the system or its operation is prohibited. Evidence of such acts may be disclosed to law enforcement authorities and result in criminal prosecution under the Computer Fraud and Abuse Act of 1986 and the National Information Infrastructure Protection Act of 1996, codified at section 1030 of Title 18 of the United States Code, or other applicable criminal laws.

Continue Cancel Helpful Hint: If you click
Cancel, you will be directed to the PARS II documentation homepage.



O&A - Projects



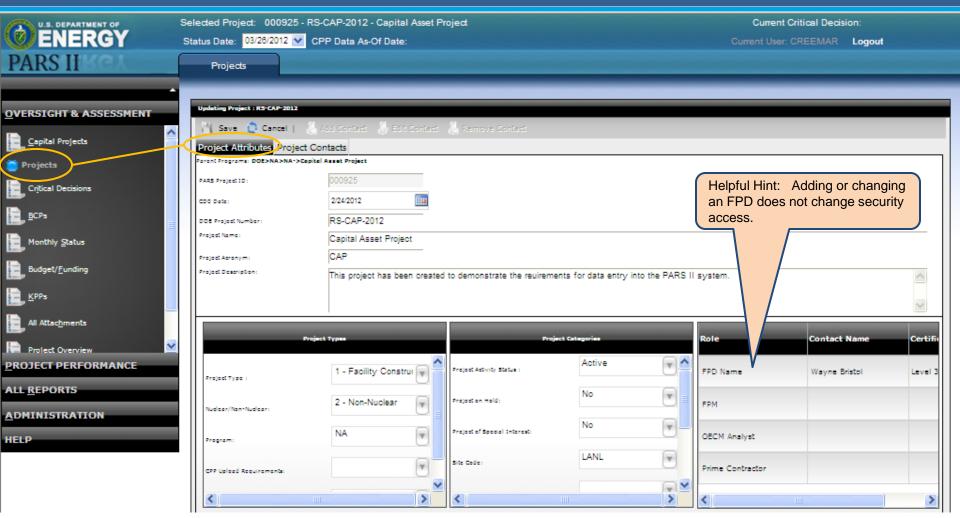


Helpful Hint: To see all projects you have access, select Find and Search.

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Project Attributes

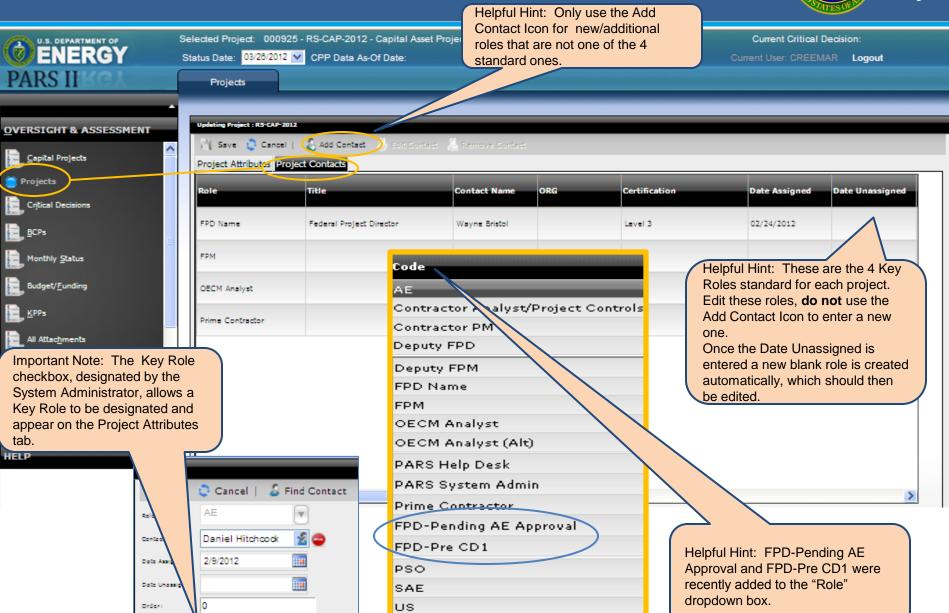




Project Attributes - Contacts

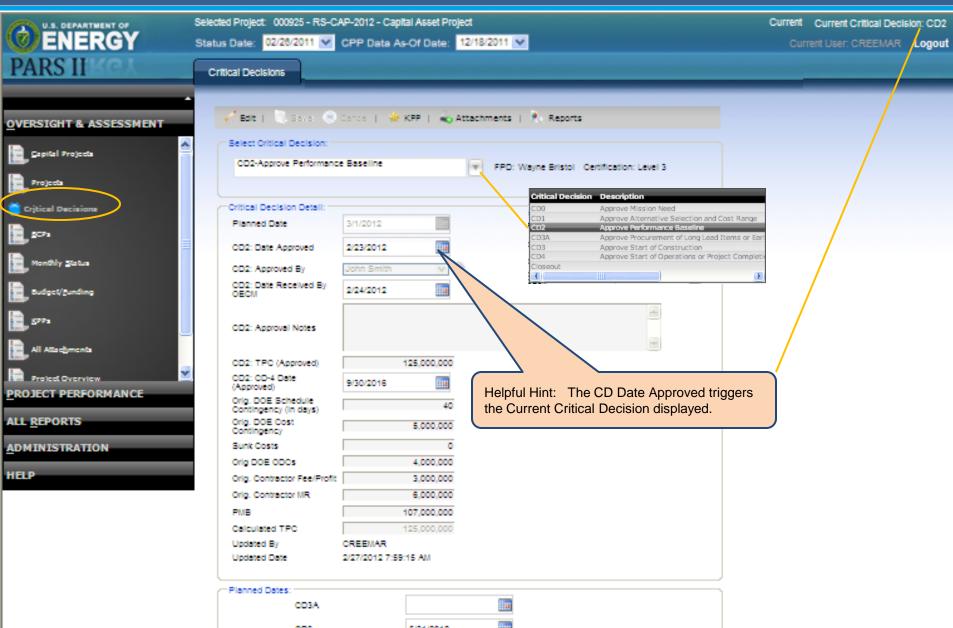
Key Contact Role





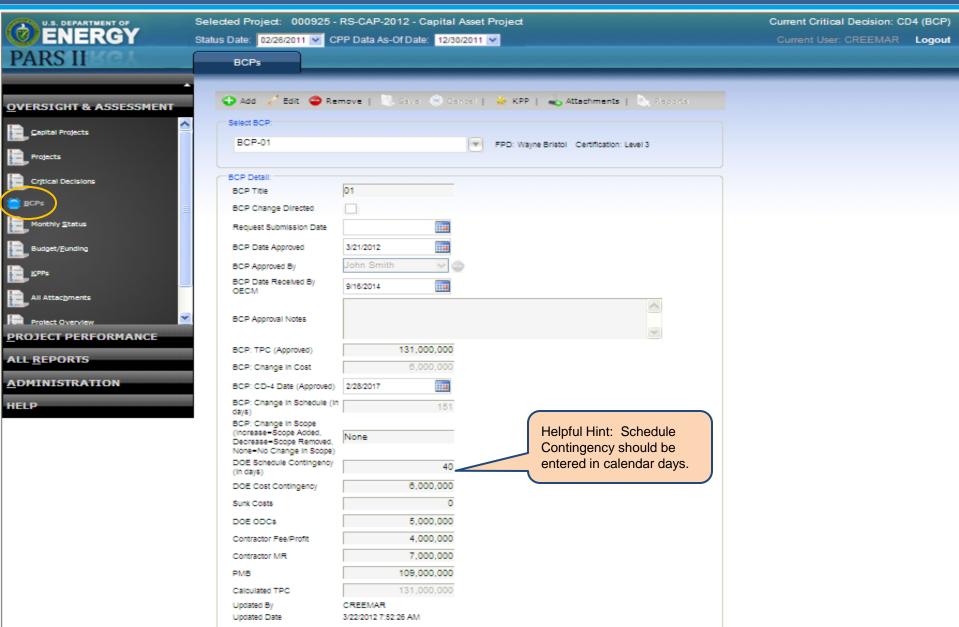
O&A – Critical Decisions





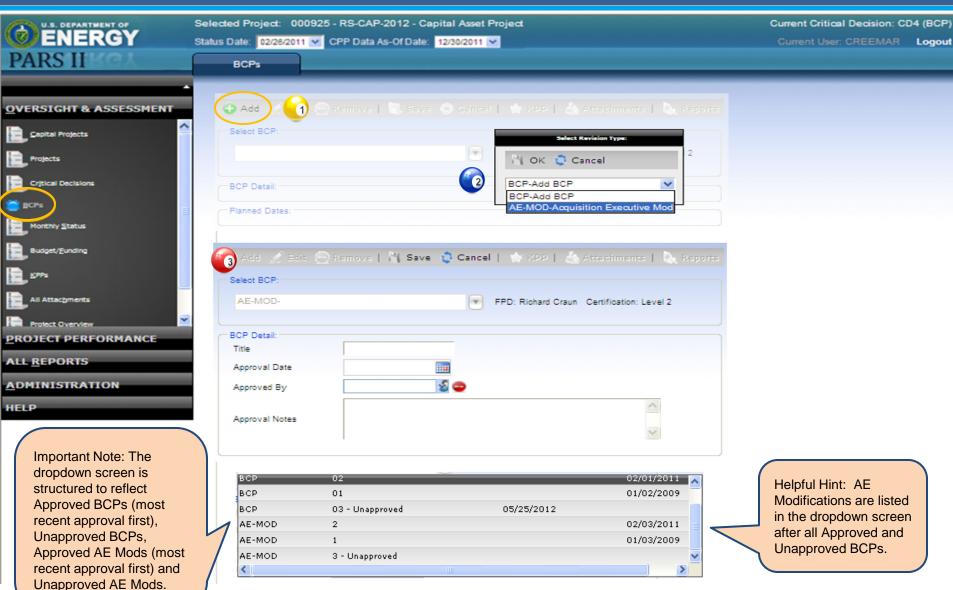
O&A Module - BCPs





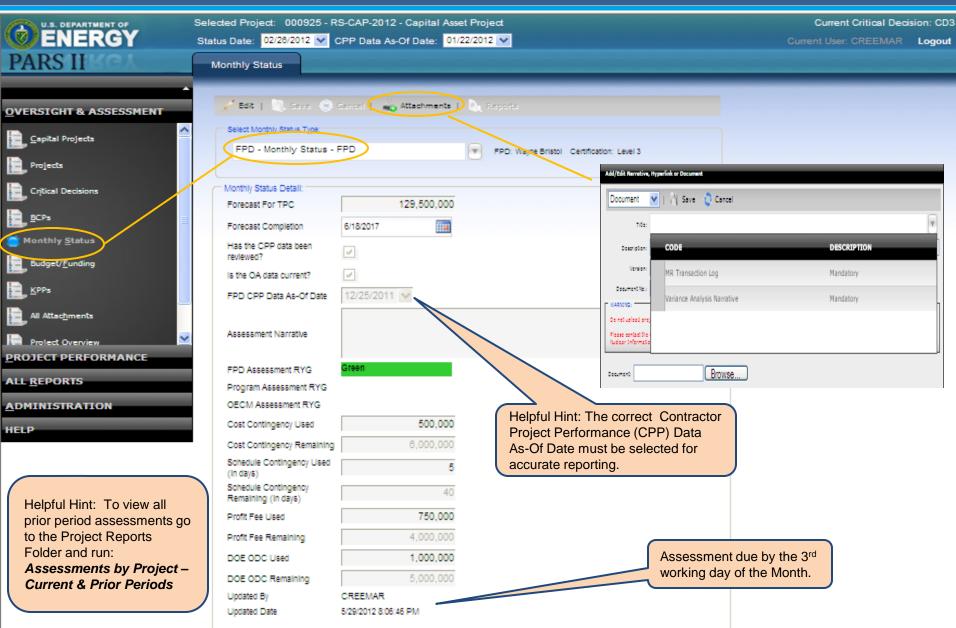
O&A Module - AE Modification





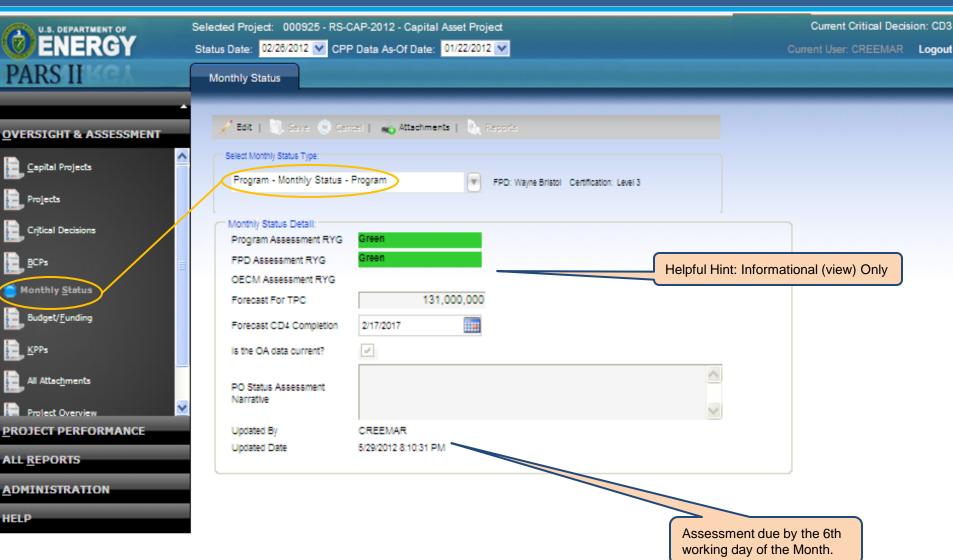
O&A Module – Monthly Status – FPD





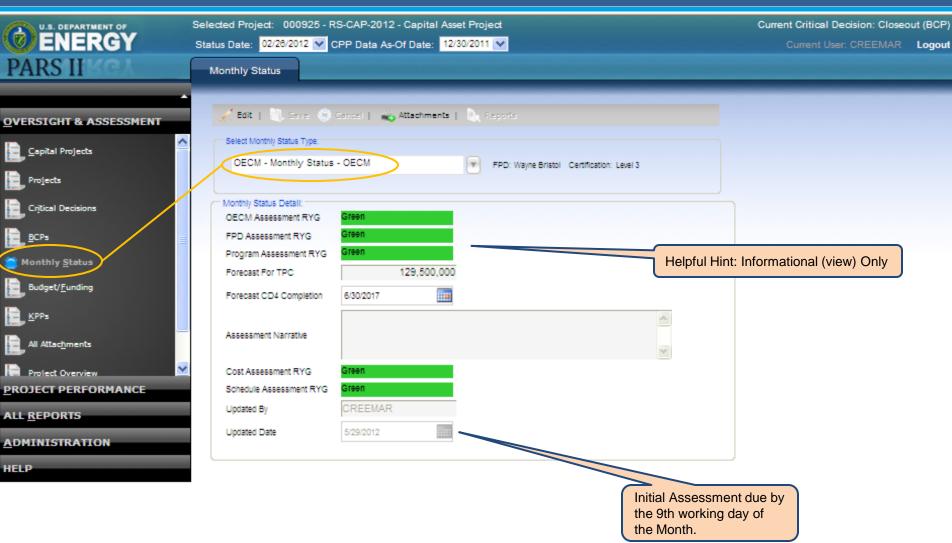
O&A Module – Monthly Status – Program





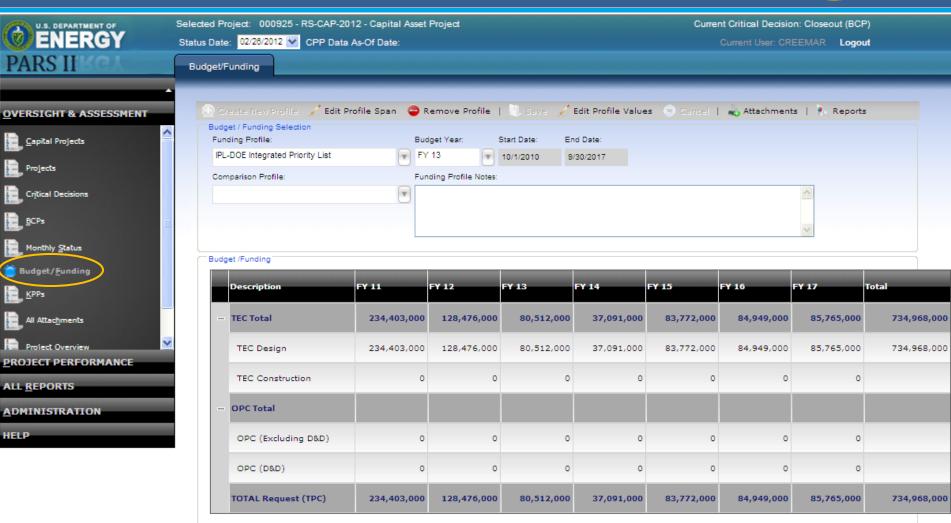
O&A Module – Monthly Status – APM



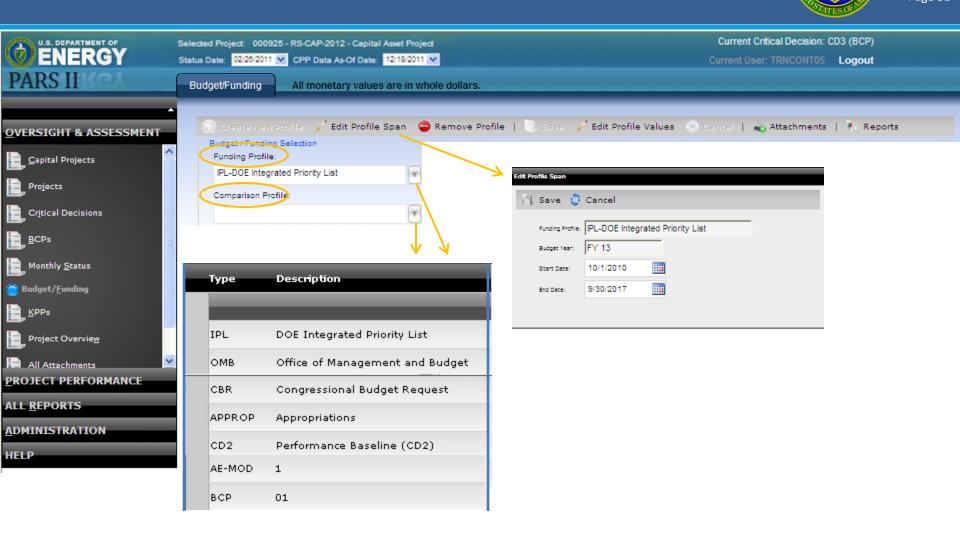


O&A Module – Budget / Funding



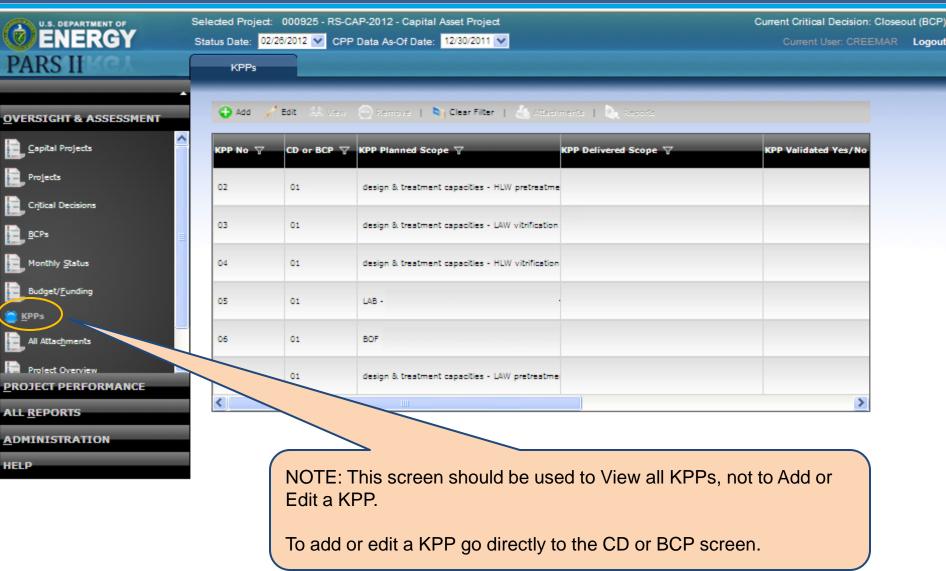


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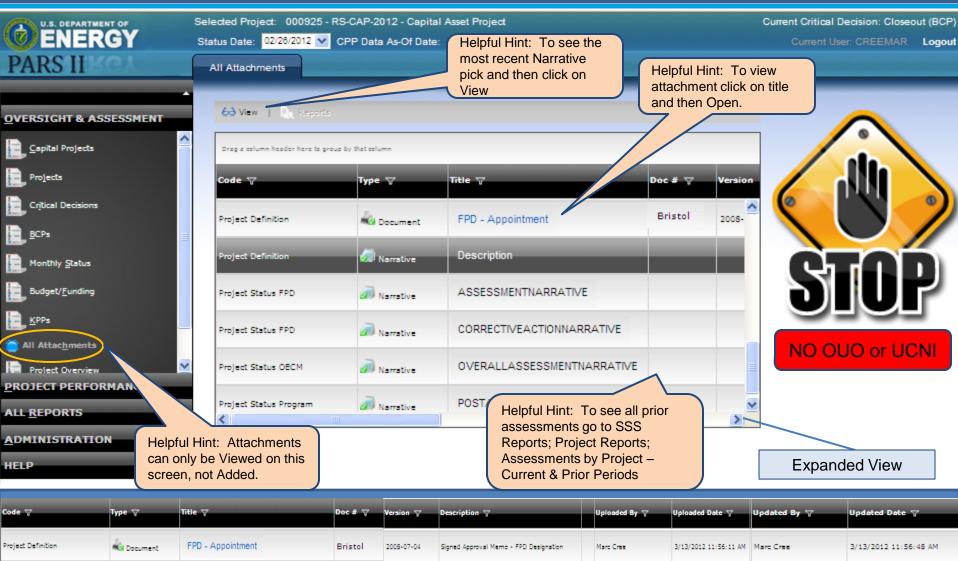
O&A Module – KPPs (Key Performance Parameters)





O&A Module – All Attachments

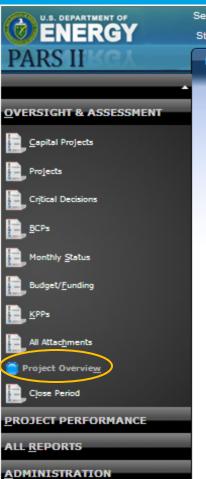




O&A Module – Project Overview



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HELP

Selected Project: 000925 - RS-CAP-2012 - Capital Asset Project

Current Critical Decision: Closeout (BCP)

Current User: CREEMAR L

Status Date: 02/26/2012 V CPP Data As-Of Date: 12/30/2011 V

Project Overview

Helpful Hint: This report is an Excel file, not a Dashboard. The report is also available via SSS Reports; Project Reports; Project Overview

Report was successfully generated.

Reopen Report

Bajad Balas 8/28/2812 Panah 888289 - Bal Wada 88 Blaha Balas 8/26/2812	Process Indo EMP1 - CPP Bolo Bo B1 Bolo 4/27/2812	ENERGY
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Project Ident	ification	Paintr of Contact
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DOE Prajeal Ba:		Phillip Tang Palk, Level 4
Project Baur:	SallWante Pennenning Panility	
B:! T	SWPF 1-Facility Construction	Pragram P&C CraigWeat
Beelear:		[282] SBS-3553, araig.ural@bg.dar.gas
Project Status:		APH AIg-I
*- B-14:	H.	Riak Elliall
proial Interrat:	H-	282 287-1528, Riob.Ellioll@bq.dor.qoo
_		Caalraalar
Program:		PIBTG ESS Dininion, Coelified
311-:	Sanannah Riner Sile (SRS)	Parenes Infrantrusters & Trebustaga Group
Critical Deci	inar	
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Correl DCP:		CDB: 1/4 /1.2011
		CD4: 4/4 Aug 2014
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81 Appround By:	Jefferg Kapfer	CD3: 1/2 /242315
		CD4: Srp 2117 Srp 2117 CD4: 0=12145
FPC Appround : halo Appround :		escali s/4
	VII.13	AFFAI.
Current Arres	rments - POST CD-2	
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Project Overview - Top Half



Report Date: 5/30/2012

Project: 000389 - Salt Waste Processing Facility (SWPF)

OA Status Date: 5/26/2012 - CPP Data As Of Date: 4/27/2012



Project Overview

Project Identification

PARS II Project ID: 000389 DOE Project No: 05-D-405

Project Name: Salt Waste Processing Facility

(SWPF)

Project Type: 1 - Facility Construction

Nuclear: No Project Status: Active On Hold: No Special Interest: No

Program: EM

Site: Savannah River Site (SRS)

Points of Contact

Federal Project Director

Phillip (Tony) Polk, Level 4

(803) 641-8972, tony.polk@srs.gov

Program POC

Craig West

(202) 586-9559, craig.west@hq.doe.gov

APM Analyst

Rick Elliott

(202) 287-1520, Rick.Elliott@hq.doe.gov

Contractor

PI&TG ESS Division, Certified

Parsons Infrastructure & Technology Group, Inc.

Critical Decisions

Current CD: CD3 Current BCP: BCP-01

CD3 Approved By: Jeffrey Kupfer BCP-01 Approved By: Jeffrey Kupfer

TPC (Approved): \$1,339,000,000 CD4 Date (Approved): Oct 2015

	Planned Dates	Approved Dates
CD0:	n/a	Jun 2001
CD1:	n/a	Aug 2004
CD2:	n/a	Sep 2007
CD3:	n/a	Jan 2009
CD3A:	Sep 2007	Sep 2007
CD4:	Oct 2015	
Closeout:	n/a	

Project Overview - Bottom Half



Current Assessments - POST CD-2

Current DOE Assessment Period: May 2012

FPD Assessment: Red

Change from Prior: No

FPD Forecasted TPC: \$1,489,548,000

FPD Forecasted CD4: Oct 2015

APM Assessment: Red

of Months at Red: 3

APM Forecasted TPC: \$1,650,000,000

APM Forecasted CD4: Oct 2015

Performance Baseline - POST CD-2

Low High CD1 TPC Range: \$375,000,000 \$400,000,000

Original CD2 TPC: \$900,000,000

Latest Approved TPC: \$1,339,000,000

APM Forecasted TPC: \$1,650,000,000

FPD Forecasted TPC: \$1,489,548,000

Actual CD4 TPC:

Original CD4: Nov 2013

Latest Approved CD4: Oct 2015

APM Forecasted CD4: Oct 2015

FPD Forecasted CD4: Oct 2015

CD4 Approved Date:

Scope (KPPs): 3 KPP(s) entered.

See PROJECT KPPs for details.

Performance Snapshot - POST CD-2

EV Performance Period: April 2012

*Cum CPWSPi Based on Performance Since 07/27/2007

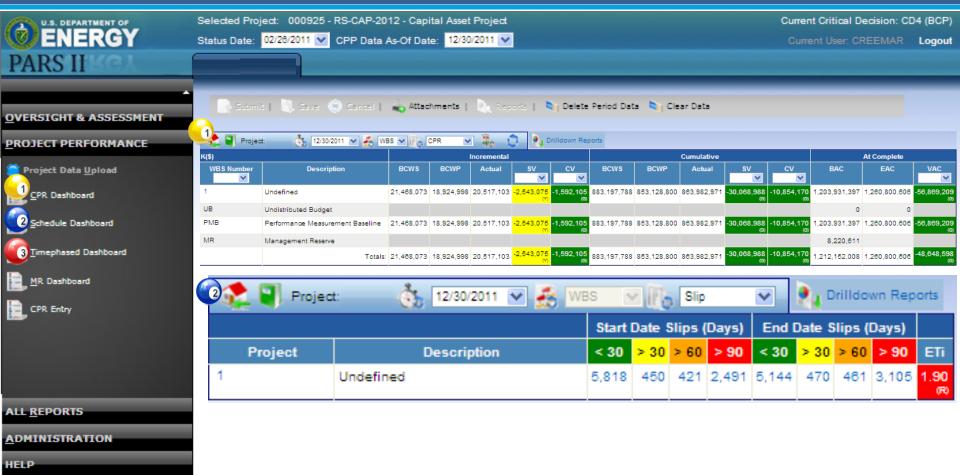
	At BCP-01	Remaining
Contingency (\$):	\$116,800,000	\$114,360,097
Contingency (Days):	420 days	226 days
DOE ODCs:	\$45,500,000	\$0
Profit/Fee:	\$61,800,000	\$13,032,096
Contractor MR:	\$158,000,000	\$7,930,515

	At BCP-01	Current
Contractor PMB:	\$957,000,000	\$1,204,221,496
Contractor EAC:		\$1,605,524,522

IEAC1	IEAC2	IEAC3
AC • (BCVR / CPi)	AC + BCVR / CPi *	AC • (BCVR / Avg CPi)
\$1,250,643,950	\$1,268,935,721	\$1,361,942,357

Project Performance Module - Dashboards



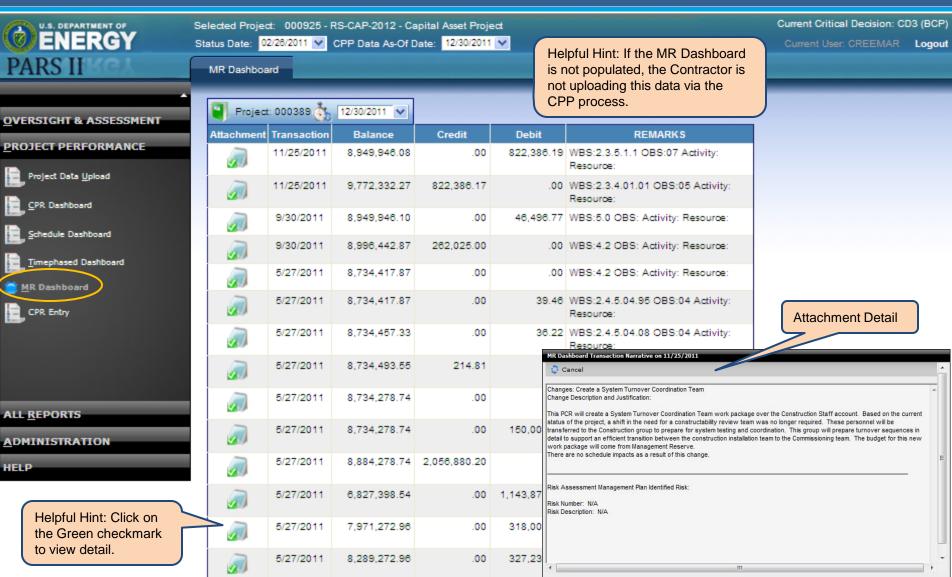


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Á	Project: 12302011 V 🚜 WBS V 🎅 Drilldown Reports																					
	2011 2012 2								2013													
V	VBS Number	Description	Element	Prior	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	ROP	Total
1		Undefined	S	804,059,049	22,241,215	18,609,937	16,819,515	21,468,073	20,163,699	20,852,350	23,976,371	18,350,942	23,356,668	23,135,919	15,382,551	19,141,145	14,027,093	11,897,174	15,689,997	12,028,888	102,750,810	1,203,931,397
			Р	779,698,228	21,188,329	16,673,840	16,643,406	18,924,998														853,128,800
			A	778,151,089	27,973,165	18,624,458	18,717,155	20,517,103														863,982,971
			EAC	778,151,089	27,973,165	18,624,458	18,717,155	20,517,103	16,529,916	22,322,749	27,234,946	19,385,259	18,933,182	23,423,388	17,138,380	21,262,412	15,169,111	18,499,263	23,385,742	14,171,324	159,384,003	1,260,800,606

MR Dashboard

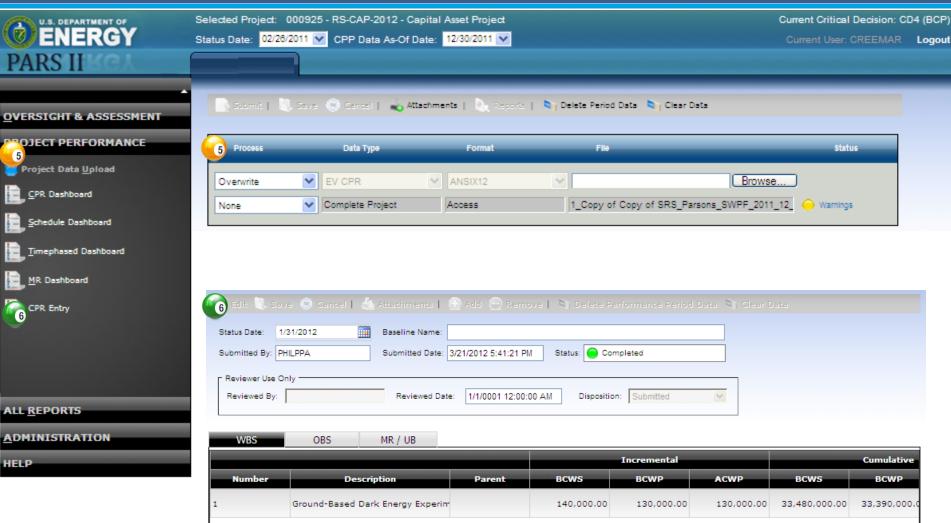
(Slide 100 provides further detail)





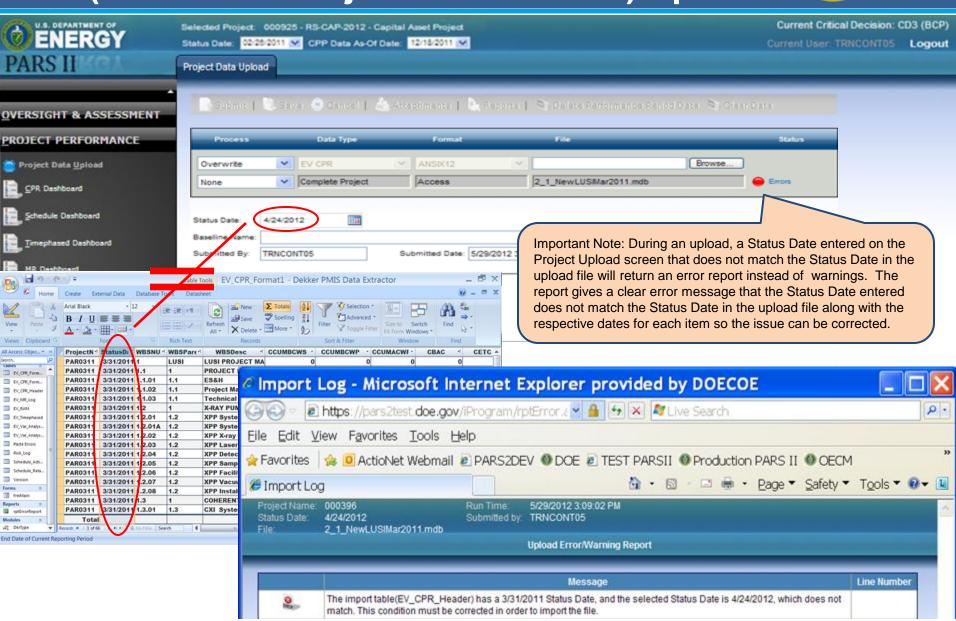
Project Performance Module





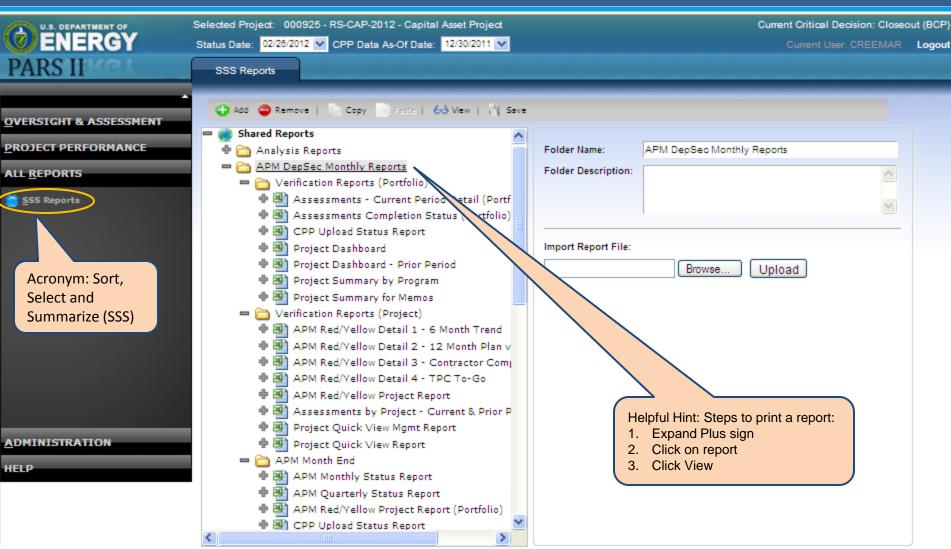
Project Performance Module CPP (Contractor Project Performance) Upload





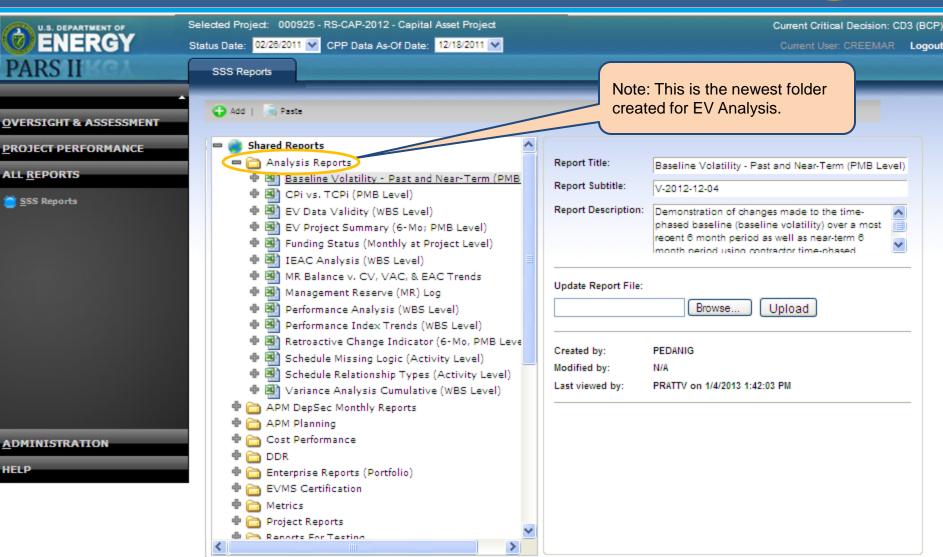
All Reports Module - SSS Reports





SSS Reports - Analysis

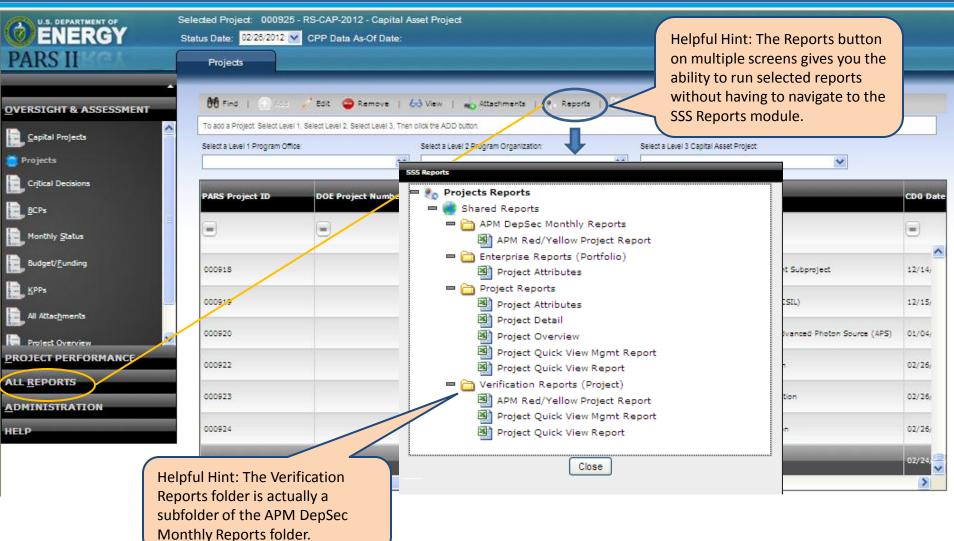




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All Reports - Reports Button





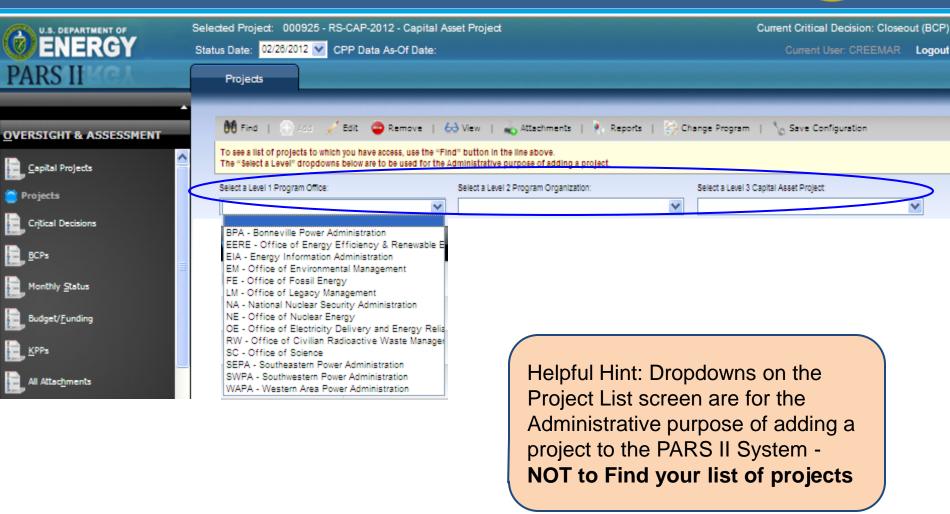
Project Find/Search



- Program Capital Asset Dropdowns
- Locate a Project or Entire Project List
 - Ctrl F
 - Find Icon
 - Search Icon
- Search Criteria
 - Project Activity Status, Contact Last Name, Program, Site Code
- Project List Formatting / Sorting

Capital Asset Dropdowns

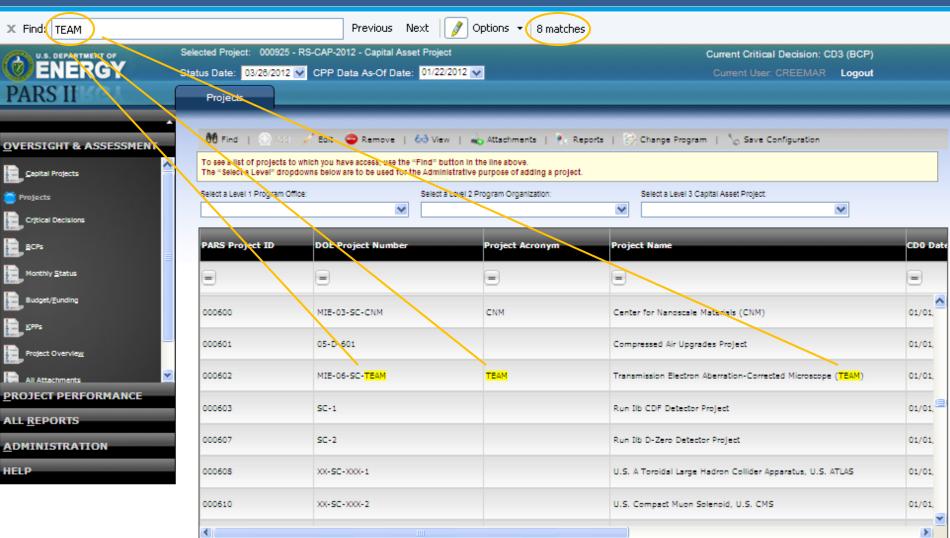




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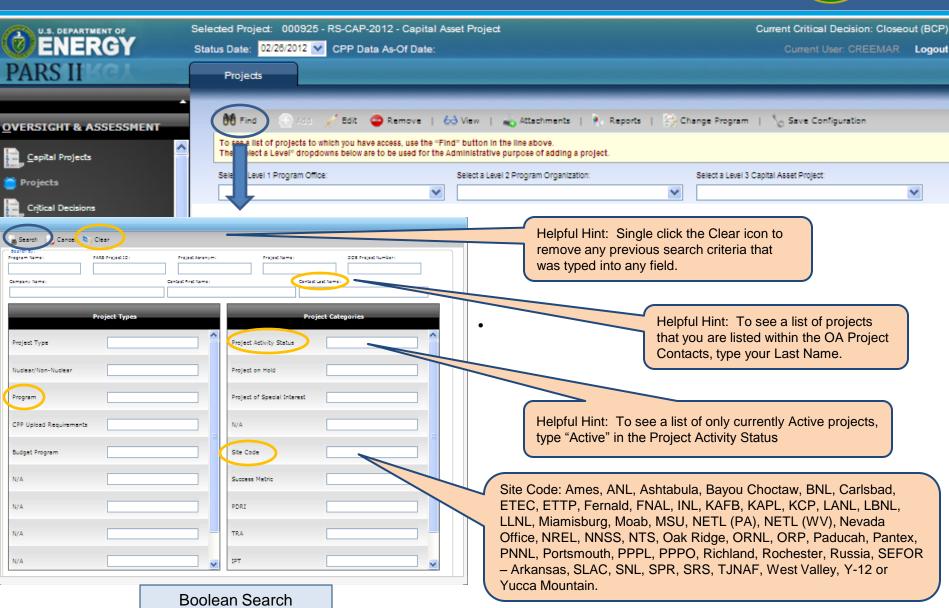
Project Search - Ctrl F





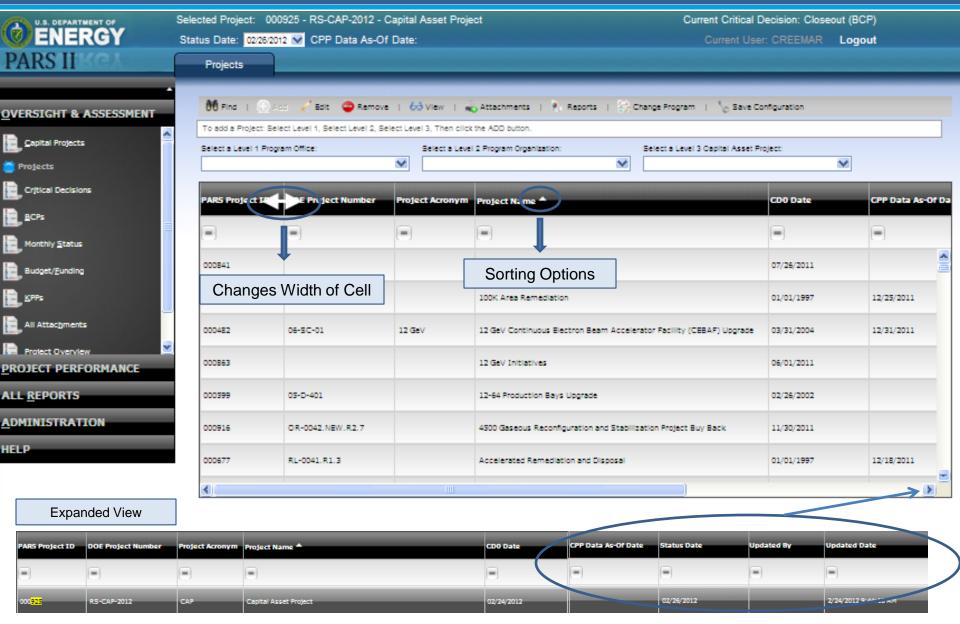
Project - Find / Search





Projects - Formatting / Sorting Options





PARS II Overview Wrap-Up



Account Access



Find/Search for a Project

Navigating PARS II



Project Lifecycle in PARS II

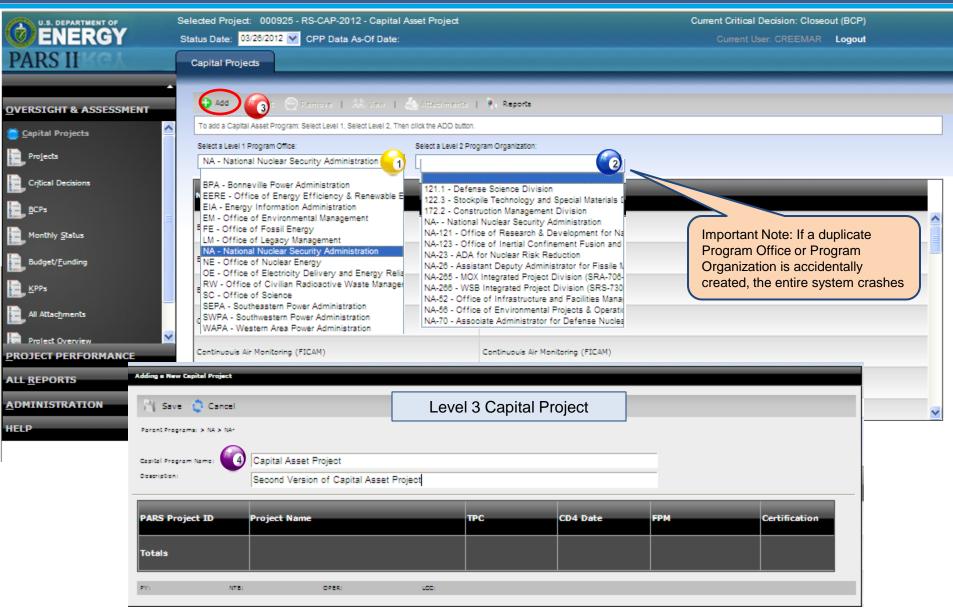


- Receive Initial CD memo
- Create Project / Capital Asset Project
- Project Attributes / Contacts
 - CD0
 - CD1
 - CD2
 - CD3A (as required)
 - CD3
 - BCPs
 - CD4
 - Closeout
- Coordination required BCP / Next CD
- KPPs
- Attachments

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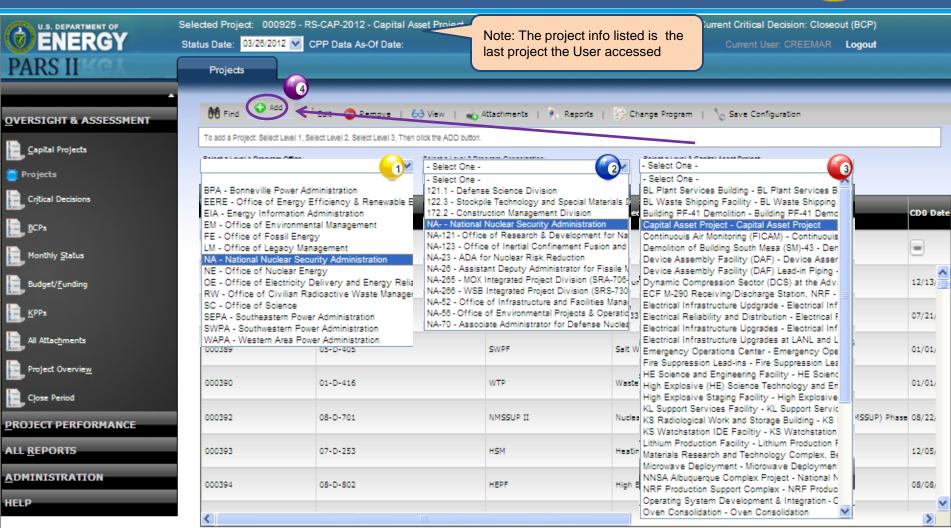
Creating a Capital Asset Project





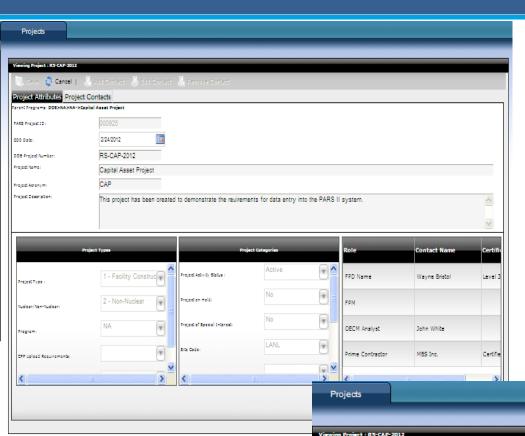
Creating a Capital Asset Project





Project Attributes / Project Contacts



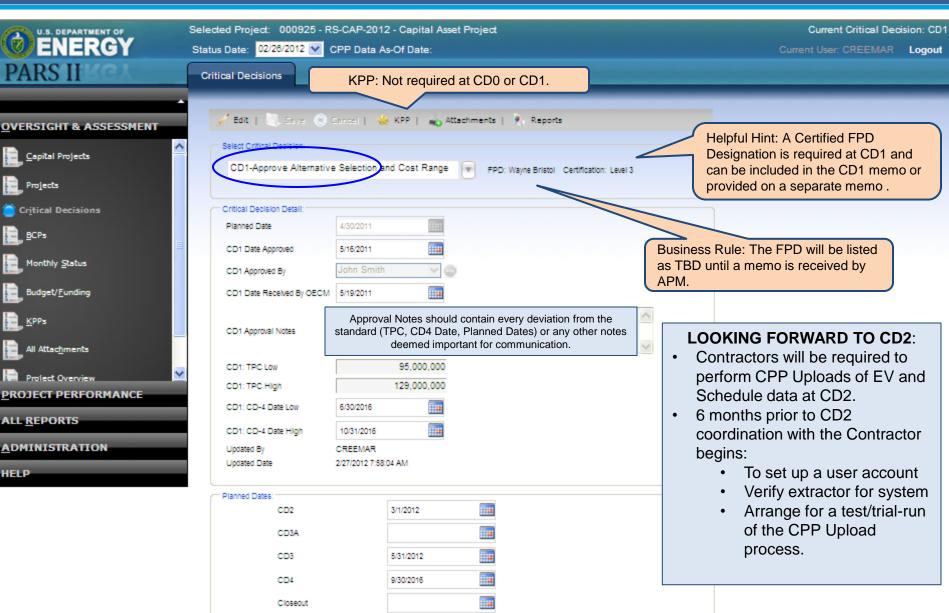


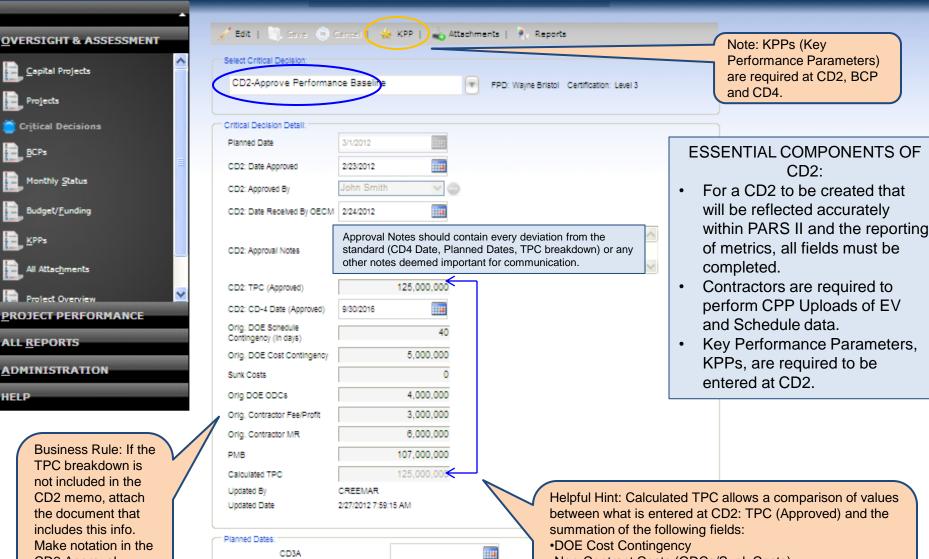
Important Fields

- DOE Project Number
- Project Name
- Project Acronym
- Project Description
- Program
- Site Code
- Contacts & Date Assigned

Cancel | Add Contact A Edit Contact A Remove Contact Project Attributes Project Contacts Contact Name Certification Date Assigned Date Unassigned FPD Name Federal Project Director 02/24/2012 Wayne Bristol FPM OECM Analyst OECM Analyst John White Department of Energy 02/24/2012 Prime Contractor MBS Inc. MBS Inc. Certified 02/24/2012







5/31/2012

2/28/2017

Non-Contract Costs (ODCs/Sunk Costs)

Contractor Fee/Profit

Contractor MR

PMB.

CD3A

CD3

CD4

Closeout

CD2 Approval

Notes.

CD2 Template



TEMPLATE FOR APPROVAL OF PERFORMANCE BASELINE CD-2

During preparation of CD-2 and prior to approval, coordinate document with OECM.

The following information should be clearly identifiable in the approval document:

- . Name and Title of Acquisition Executive (Approving Official)
- Purpose (e.g., Approval of CD-2, Performance Baseline for Project Y)

The following Performance Baseline information must be clearly listed. [DOE 0 413.38, Appendix A, 4.c.(1)] It is preferable for it to be in the first paragraph of a memo or on the front page of a multipage document. This is necessary to clearly define the original Performance Baseline for the record.

- . The approved Performance Baseline Total Project Cost
- . The approved CD-4 Project Completion date Month and Year
- The major scope elements, minimum Key Performance Parameters (KPPs), and capital asset requirements defining successful completion of the project (bullet list or table)

A table documenting the Funding Profile from project inception to completion that the Acquisition Executive and Program Office are committing to request (example following). [DDE O 413.3B, Appendix C. 15.c. Data entered on PARS II Budget/Funding screen.]

This is the funding profile that will be contained in the Project Data Sheet (PDS) submitted in the Congressional Budget Request. If no PDS is submitted and only operating expense funds are used, then list the funding profile in the TPC line, and when loaded in PARS II, the profile will be entered into the TEC Construction line which will auto calculate to the TPC line.

Description	FY	FY09	FY10	FY11	FY12	FY13	FY	Total
TEC Construction								
TEC Design (PED)								
Total TEC								
OPC (except D&D)								
OPC (D&D)								
Total OPC								
TPC								

If a new FPD is being assigned at CD-2, the Acquisition Executive can document the appointment in this memo rather than a separate appointment memo.

The following is additional information that needs to be provided to update the PARS project coccept, to enable the correct TPC baseline parameter balances to be loaded into PARS for accurate project assessment and reporting. [DOE O 413.38, Appendix C, 16. Data entered on PARS II CD-2 screen.] It can be included in the AE approval memo or a separate transmittal from a program/project official (e.g., PMSO/FPD).

A table documenting the Performance Baseline components that equate to the TPC (example table following). The project team, program office, assigned OECM project analyst, and OECM PARS admin team should begin coordinating input on these values during preparation of CD-2 and prior to approval

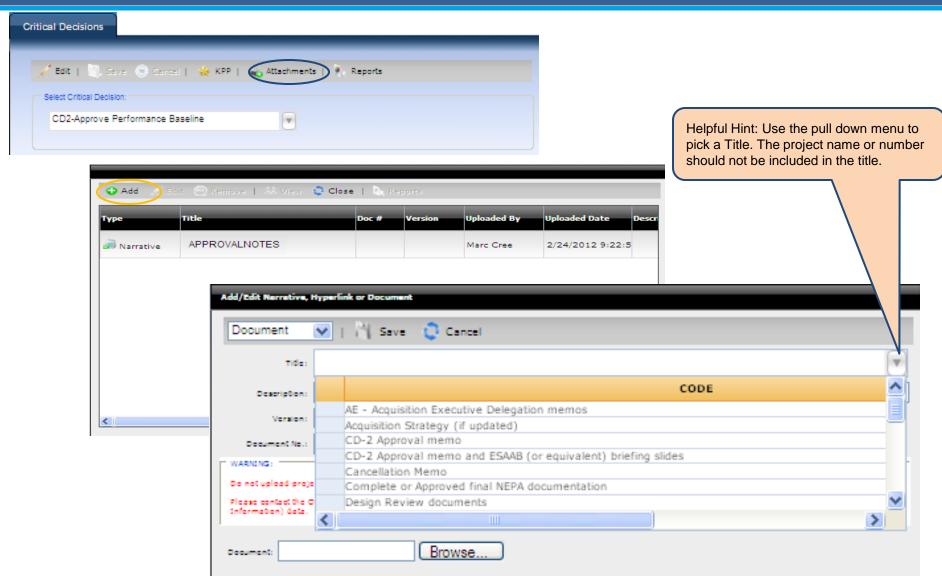
to ensure all have same understanding of purpose and meaning, and to agree upon reporting period that these values will begin applying for assessment and reporting, such that in at least this one reporting period, the PMB and MR values entered will equal the values in the contractor upload.

Description	Whole \$ Value
Sunk Costs	(Fee, ODCs, etc., previously paid/costed that won't show in any of the following lines but part of TPC)
PMB (inclusive of Undistributed Budget)	Contractor's BAC
Management Reserve	Starting balance from CD-2
Fee/Profit	Starting balance from CD-2 that fee/profit paid will be decremented from to calculate Fee/Profit remaining
DOE Other Direct Costs (ODCs)	Starting balance from CD-2 that ODCs used will be decremented from to calculate DOE ODCs remaining
Cost Contingency	Starting balance from CD-2 that Cost Contingency used will be decremented fro to calculate Cost Contingency remaining
Performance baseline (TPC)	Above values must sum to Approved TPC
Schedule Contingency (Calendar Days)	Starting balance from CD-2P that Schedule Contingency used will be decremented fro to calculate Schedule Contingency remaining

- Planned CD-3 date (if applicable)
- Name of contractor(s) which will be executing project and uploading EVMS data into PARS to
 ensure correct EVMS metric reporting to DDE leadership/management and OMB/GAO.

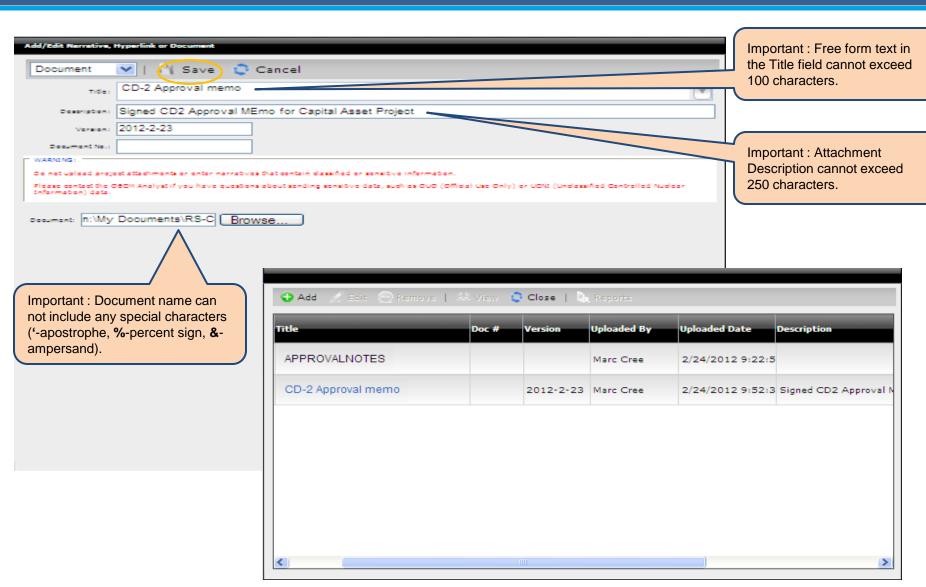
CD2 Attachment





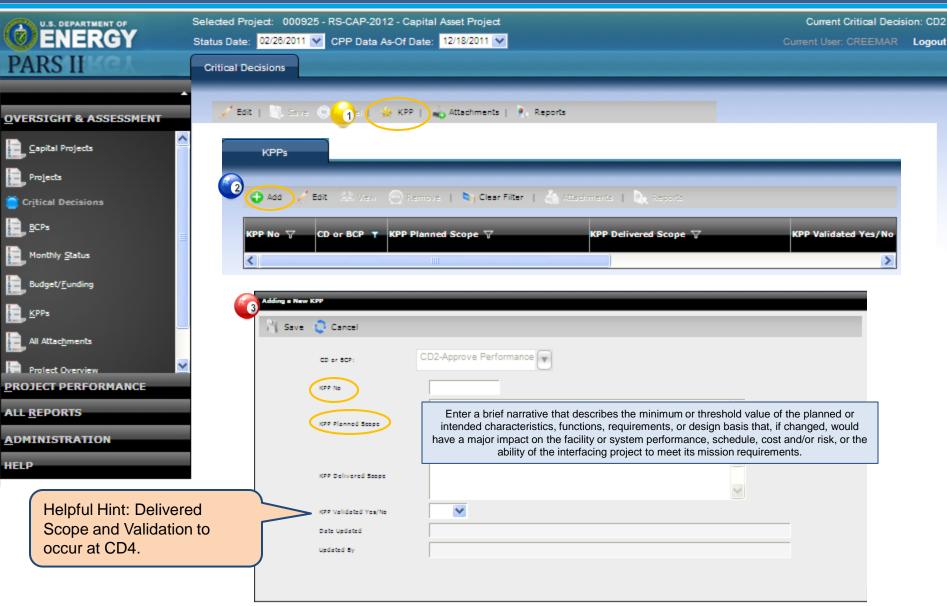
CD2 Attachment





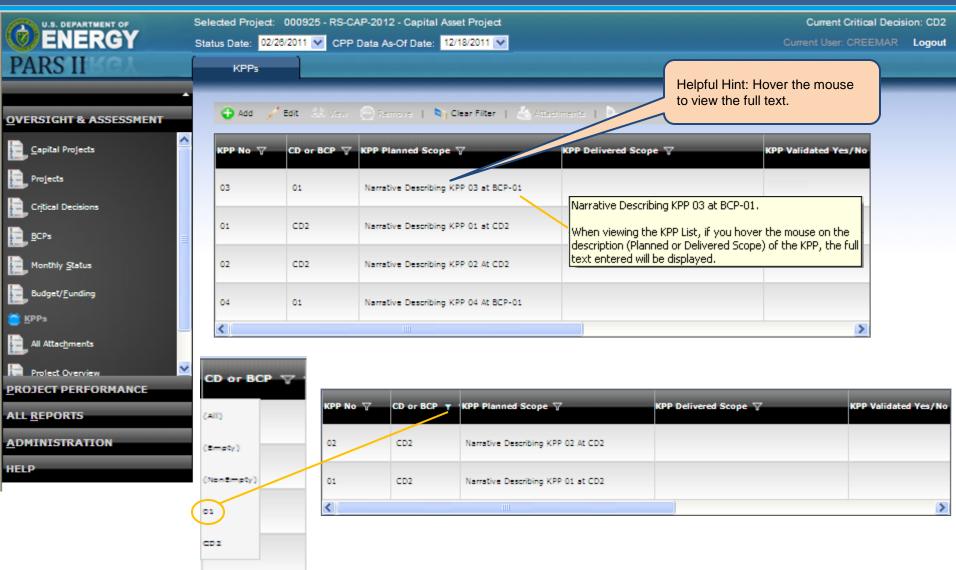
CD-2 KPP (Key Performance Parameter)



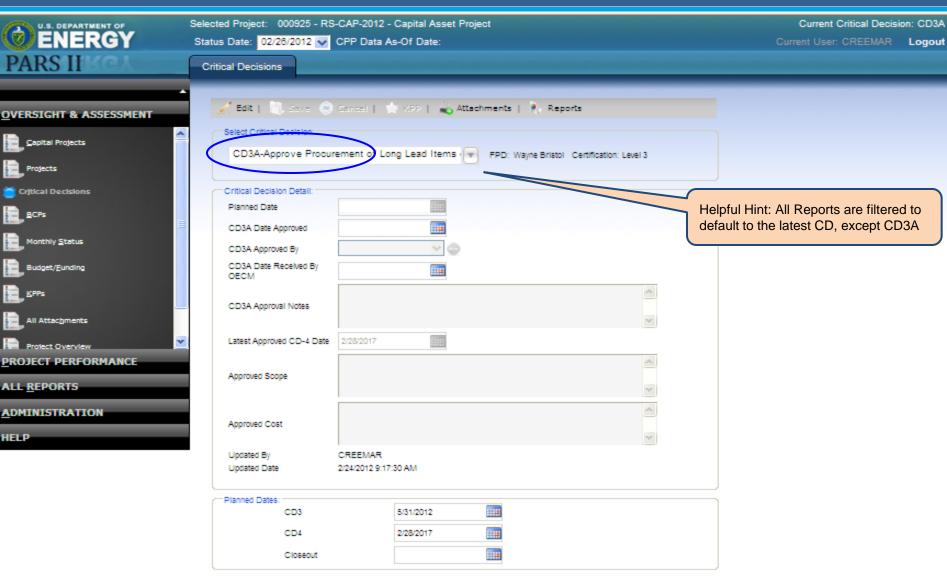


KPP Module - CD2 and BCP KPPs

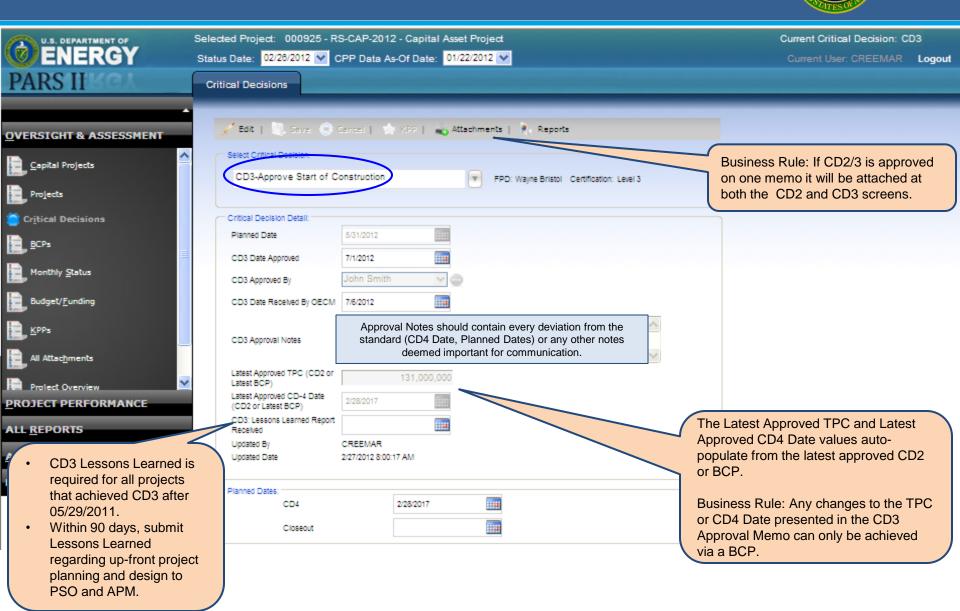


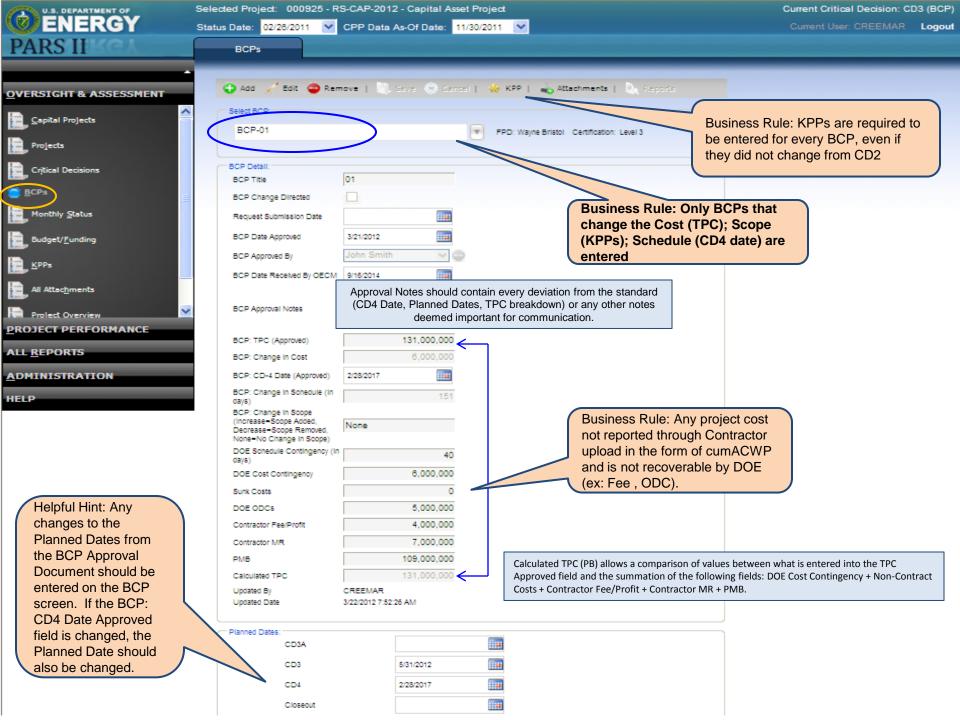












BCP Template (Baseline Change Proposal)



TEMPLATE FOR APPROVAL OF PERFORMANCE BASELINE BCP

During preparation of BCP and prior to approval, coordinate document with OECM.

The following information should be clearly identifiable in the approval document:

- Name and Title of Acquisition Executive (Approving Official); if authority delegated, reference and provide delegation memo
- · Purpose (e.g., Approval of Performance Baseline BCP for Project Y)

The following Performance Baseline information must be clearly listed. [DOE O 413.3B, Appendix A, 6.b.] It is preferable for it to be in a table (example provided) on the front page of a memo or multipage document. This is necessary to clearly define Performance Baseline changes for the record.

- . The approved Performance Baseline Total Project Cost
- . The approved CD-4 Project Completion date Month and Year
- The major scope elements, minimum Key Performance Parameters (KPPs), and capital asset requirements defining successful completion of the project

Total Project Co	stat		CD-4 Completion Date at					
CD-2 Last BCP* This BCP			CD-2 Lest BCP* This BCP					

Scope/KPP/Requi	irement established at	Characterize Change (e.g., New,			
CD-2	Last BCP*	This BCP	Deleted, Increased, Decreased)		

^{*} If this is the 1st BCP, then this field should be marked N/A.

A table documenting the Funding Profile from project inception to completion that the Acquisition Executive and Program Office are committing to request (example following). [DDE O 413.38, Appendix C, 15.c. Data entered on PARS II Budget/Funding screen.]

This is the funding profile that will be contained in the Project Data Sheet (PDS) submitted in the Congressional Budget Request. If no PDS is submitted and only operating expense funds are used, then list the funding profile in the TPC line, and when loaded in PARS II, the profile will be entered into the TEC Construction line which will auto calculate to the TPC line.

Description	FY	FY09	FY10	FY11	FY12	FY13	FY	Total
TEC Construction								
TEC Design (PED)								
Total TEC								
OPC (except D&D)								
OPC (D&D)								
Total OPC								
TPC								

If a new FPD is being assigned at this BCP, the Acquisition Executive can document the appointment in this memo rather than a separate appointment memo.

The following is additional information that needs to be provided to update the PARS project record to enable the correct TPC baseline parameter balances to be loaded into PARS for accurate project assessment and reporting. [DOE O 413.3B, Appendix C, 16. Data entered on PARS II BCP screen.] It can be included in the AE approval memo or a separate transmittal from a program/project official (e.g., PMISO/IPD).

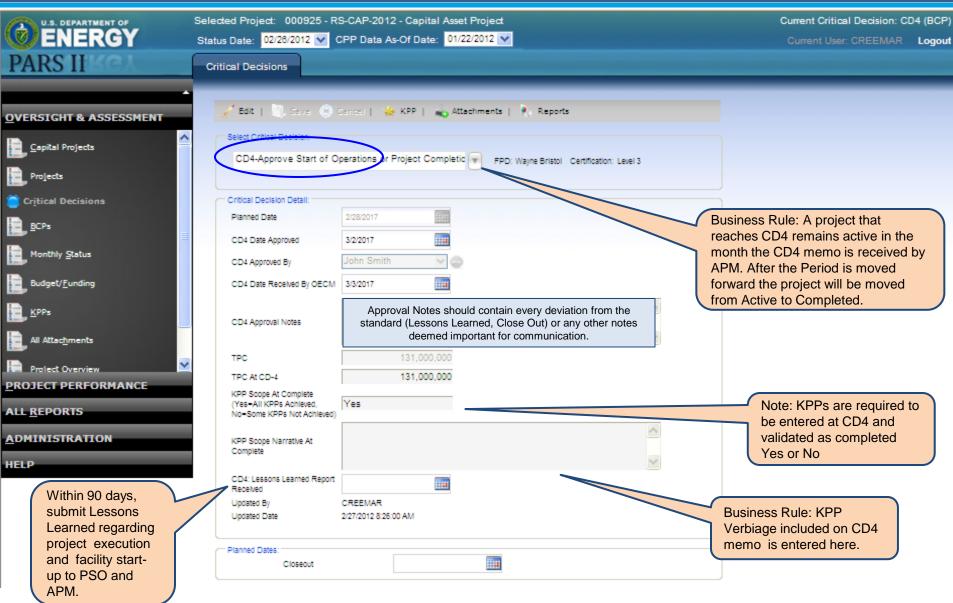
A table documenting the Performance Baseline components that equate to the TPC (example table following). The project team, program office, assigned OECM project analyst, and OECM PARS admin team should begin coordinating input on these values during preparation of BCP and prior to approval to ensure all have same understanding of purpose and meaning, and to agree upon reporting period that these values will begin applying for assessment and reporting, such that in at least this one reporting period, the PMB and MR values entered will equal the values in the contractor upload.

Description	Whole \$ Value
Sunk Costs	(Fee, ODCs, etc., previously paid/costed that won't show in any of the following lines but part of TPC)
PMB (inclusive of Undistributed Budget)	Contractor's BAC
Management Reserve	New starting balance from BCP
Fee/Profit	New starting balance from BCP that fee/profit paid will be decremented from to calculate Fee/Profit remaining
DOE Other Direct Costs (ODCs)	New starting balance from BCP that ODCs used will be decremented from to calculate DOE ODCs remaining
Cost Contingency	New starting balance from BCP that Cost Contingency used will be decremented fro to calculate Cost Contingency remaining
Performance baseline (TPC)	Above values must sum to Approved TPC
Schedule Contingency (Calendar Days)	New starting balance from BCP that Schedule Contingency used will be decremented fro to calculate Schedule Contingency remaining

- Planned CD-3 date (ifapplicable)
- Name of contractor(s) which will be executing project and uploading EVMS data into PARS to
 ensure correct EVMS metric reporting to DOE leadership/management and OMB/GAO.







CD4 Template



TEMPLATE FOR APPROVAL OF CD-4, START OF OPERATIONS/PROJECT COMPLETION

During preparation of CD-4 and prior to approval, coordinate document with OECM.

The following information should be clearly identifiable in the approval document:

- Name and Title of Acquisition Executive (Approving Official)
- Purpose (e.g., Approval of CD-4, Start of Operations/Project Completion, for Project Y)

The following Performance Baseline information must be clearly listed. [DOE Q 413.3B, Appendix A, 4.e.]. It is preferable for it to be in a table (example provided) on the front page of a memo or multipage document. This is necessary to clearly define the final Performance Baseline accomplished for the record.

- The estimated final TPC based on current records
- The approved CD-4 date is the date the document is signed
- The major scope elements, minimum Key Performance Parameters (KPPs), and capital asset requirements defining successful completion of the project approved at CD-2 and the latest BCP (if applicable), and the scope/KPP/facility requirements that were achieved at CD-4 as documented in (identify report title and date).

Total Project C	ost at		CD-4 Completion Date at				
CD-2 Latest BCP* CD-4			CD-2	CD-4			
					When signed		

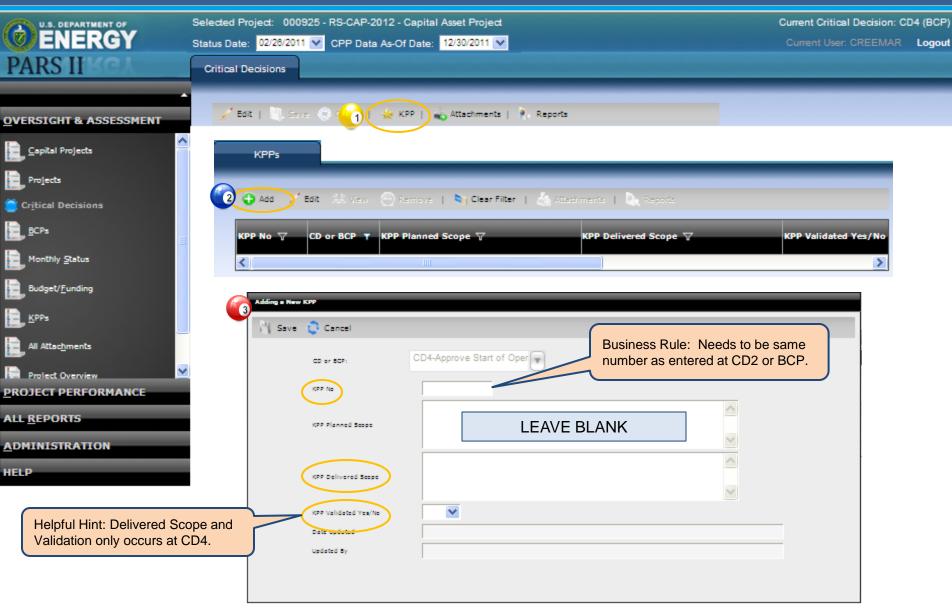
Scope/KPP/Require	ment established at	Scope/KPP/Requirement achieved at	Met Sco Requirer	
CD-2	Latest BCP*	CD-4	CD-2?	Latest BCP?*

^{*}If this is the 1" BCP, then this field should be marked N/A.

Note that any changes to the project's final TPC or completed major scope elements must be documented in the subsequent project/contract closeout report, for which the initial report is due within 90 days after CD-4 approval.

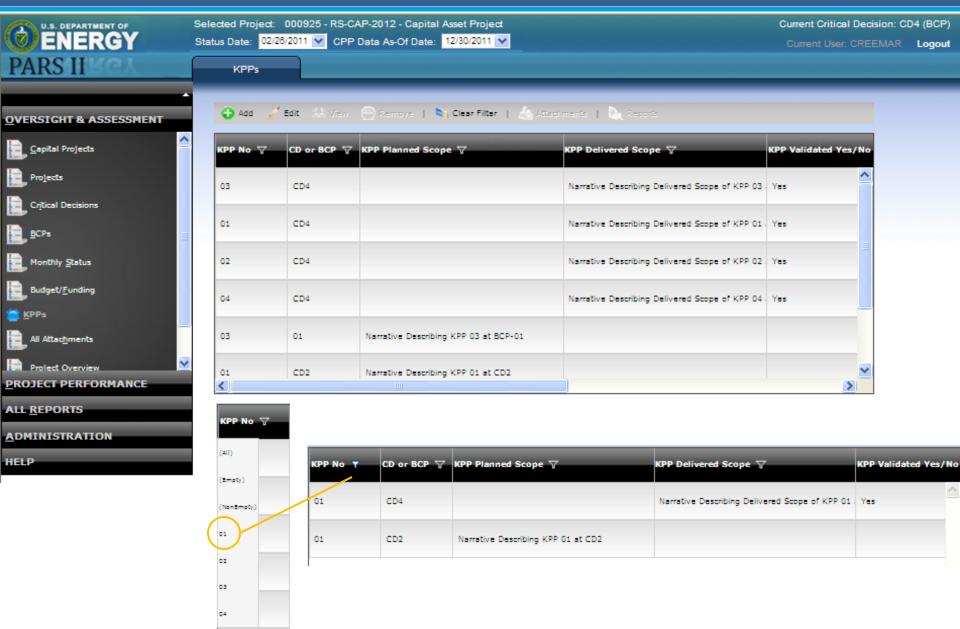
CD4 KPP Validation





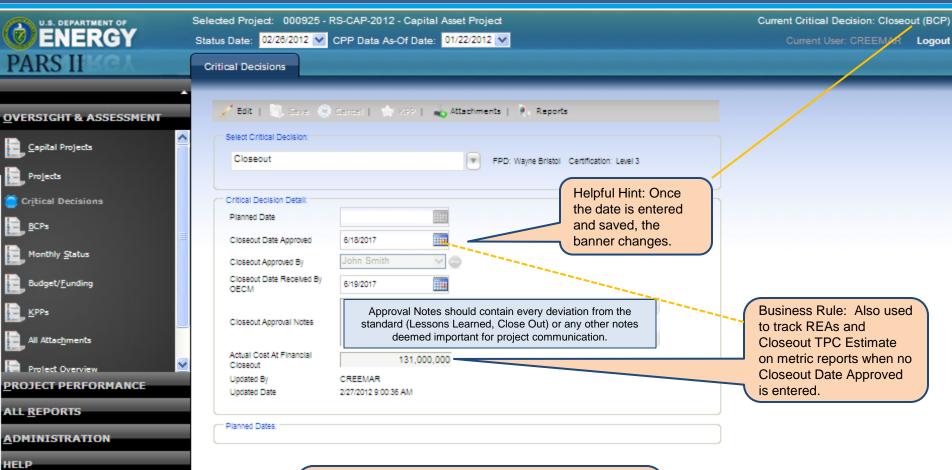
KPP Module - CD4 KPP Validation





Closeout



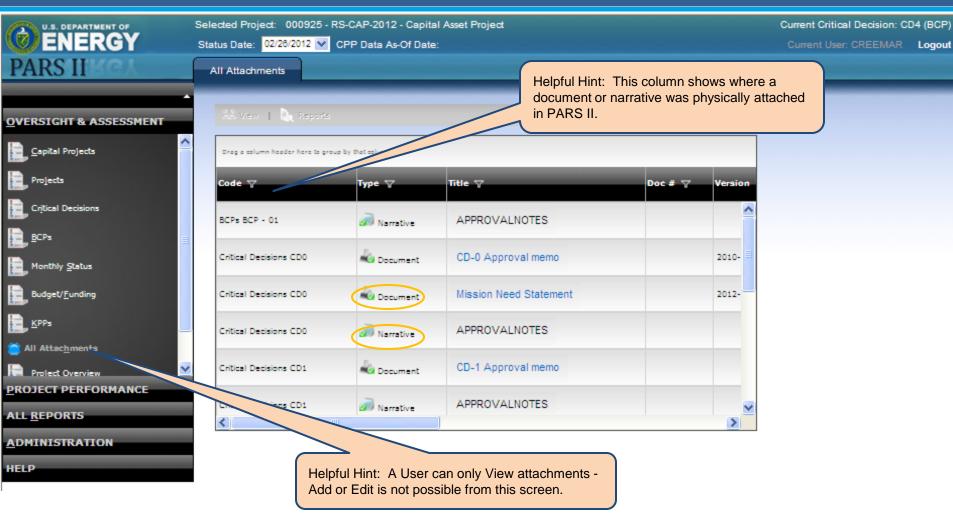


Business Rule: Edit rights are removed once a project reaches Closeout. However, the project is not archived and full View rights and reporting capabilities remain.

All Attachments



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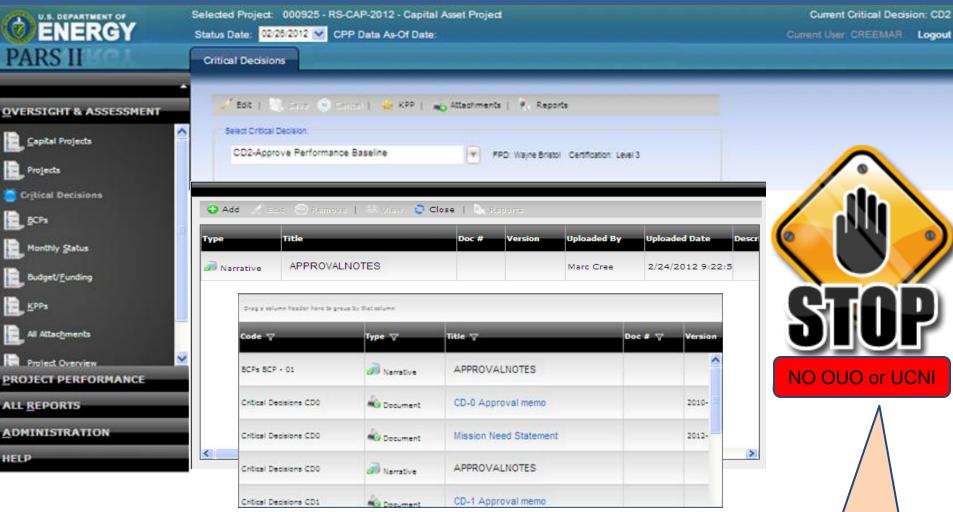


Project Attachments Report: SSS Reports / Project Reports / Project Attachments

Attachments – OUO and UCNI



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NOTE: When completing a CD, BCP or Monthly Assessment that refers to an OUO or UNCI document, the document CAN NOT be attached within PARSII.

Business Rule: Create a one page document that states where the OUO or UCNI document resides.

Project Lifecycle in PARS II Wrap-Up



- Receive initial CD memo
- Create project/Capital Asset Project



- · KPPs
- Attachments

PARS II Dashboards



What are the Dashboards?

PARS II Dashboards

- CPR Dashboard
- Timephased Dashboard
- Schedule Dashboard
- Management Reserve (MR) Dashboard



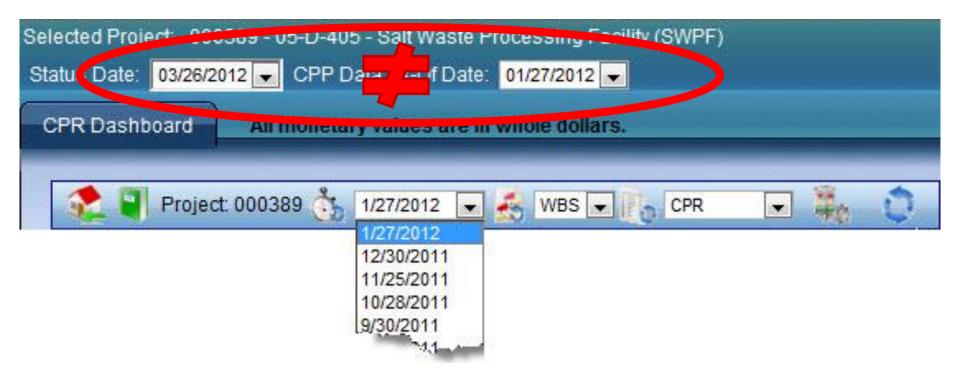
Contractor Project Performance Data Uploads

- Is My Project Required To Upload Data?
- Upload Data Requirements
- Dashboards only display data if Contractor Project Performance CPP Data exists

CPP vs. OA Periods

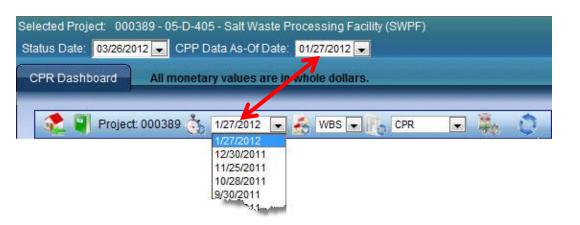


- OA Status Date DOE Performance Period
- CPP Data As Of Date Contractor Performance Period
- Linked by FPD Assessment
- Note OA and CPP Period in the PARS II Header





Viewing Data in Prior CPP Periods

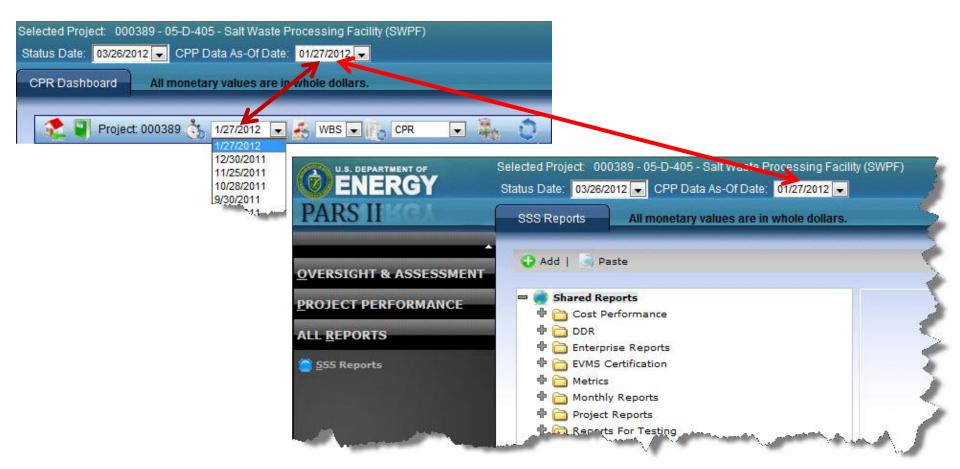


 Changing Date in Dashboards Will Change CPP Date in PARS II Header

Dashboards – Changing CPP Date

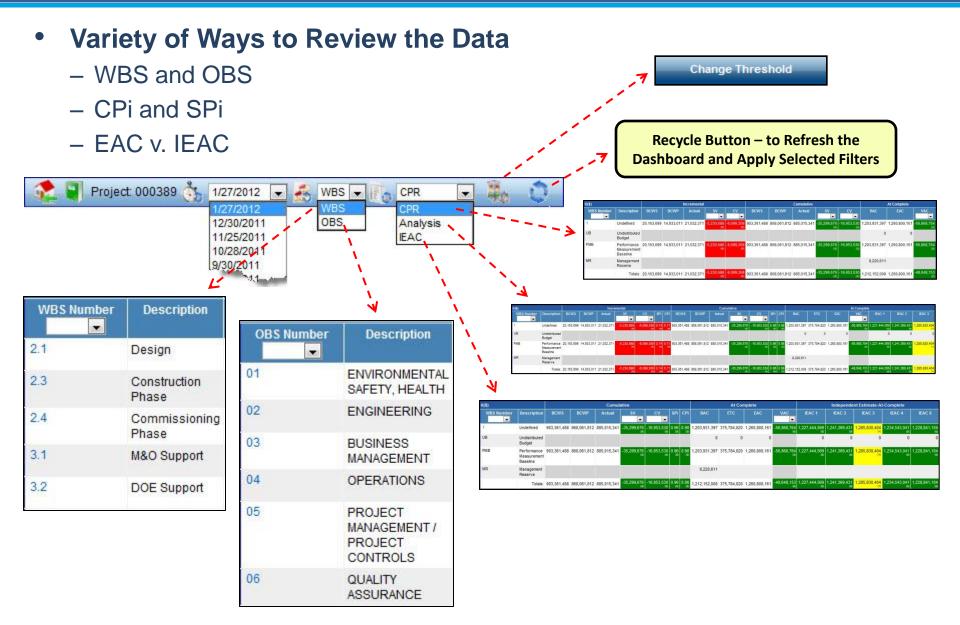


- Viewing Data in Prior CPP Periods
- Running Reports for Prior CPP Period
 - Once date is changed on Dashboard, it will remain active for purpose of running reports until changed again, project selection changed, or logout.



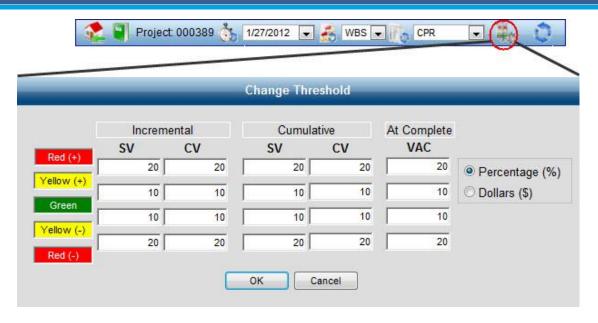
CPR Dashboard – Overview





CPR Dashboard - Thresholds





Important: Once threshold settings have been changed by a User, there is NOT a default option available to return to the application base settings. This screen shot shows the initial default thresholds in PARSII.

Understanding Thresholds

- Not dictated by contract, but are controlled by each individual User
- Used for data review and filtering on CPR Dashboard
- PARS II default thresholds
 - **GREEN**: ≤ 10%
 - **YELLOW**: > 10% AND ≤ 20%
 - **RED**: > 20%
 - No Rounding! 10.1% = YELLOW

Changing Thresholds

- Change applies to
 ALL projects for ONE user
- Changes save between sessions
- % v. \$ Thresholds Only one can be viewed at a time

CPR Dashboard – Data Overview



Contractor-reported Data Elements

- WBS and OBS
- Incremental BCWS, BCWP and ACWP
- Cumulative BCWS, BCWP, and ACWP
- Budget At Complete (BAC)
- Estimate At Complete (EAC)
- Estimate To Complete (ETC)
- Undistributed Budget (UB)
- Management Reserve (MR)

Calculated Performance Indicators

- Cost Performance Index (CPi)CPi = BCWP / ACWP
- Schedule Performance Index (SPi)SPi = BCWP / BCWS
- Percent Cost Variance (CV%)CV% = CV / BCWP
- Percent Schedule Variance (SV%)SV% = SV / BCWS

Data Elements Derived from Contractor Data

- Performance Measurement Baseline (PMB)PMB = BAC + UB
- Budgeted Cost of Work Remaining (BCWR)
 BCWR = BAC BCWP_{cum}
- Cost Variance (CV) = BCWP ACWP
- Schedule Variance (SV) = BCWP BCWS
- Variance At Complete (VAC) = BAC EAC

Calculated Independent Estimate At Complete

- IEAC1 = ACWP_{cum} + (BCWR / CPi_{cum})
- $IEAC2 = ACWP_{cum} + (BCWR / (CPi_{cum} \times SPi_{cum}))$
- $IEAC3 = ACWP_{cum} + (BCWR / CPi_{3-mo avq})$
- IEAC4 = ACWP_{cum} + (BCWR / SPi_{cum})
- IEAC 5 = $ACWP_{cum} + (BCWR / (0.8 CPi_{cum} \times 0.2 SPi_{cum}))$

NOTE: Weights assigned to CPi and SPi for IEAC5 calculation cannot be changed by user.

CPR Dashboard – CPR View



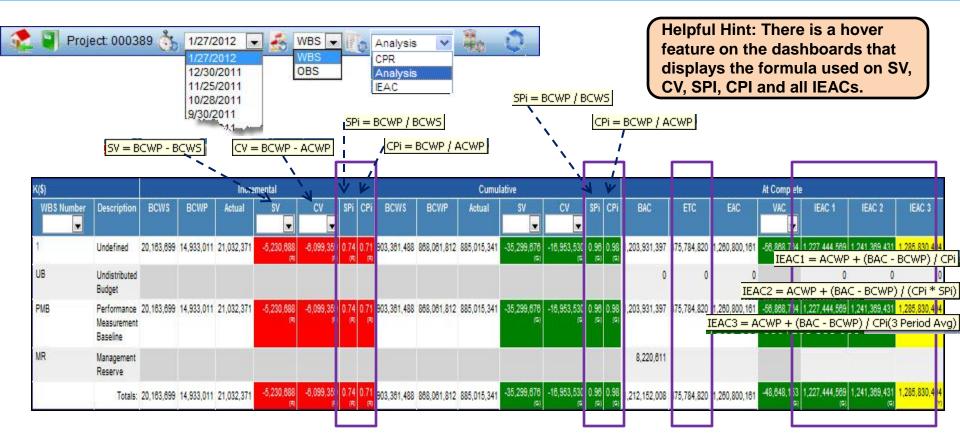


Helpful Hint: There is a hover feature on the dashboards that displays the formula used on SV & CV

K(\$)				Incremental		,			Cumulative	At Complete				
WBS Number	Description	BCWS	BCWP	Actual	SV 🔻	CV	BCWS	BCWP	Actual	sv 🔻	CV	BAC	EAC	VAC
1	Undefined	20,163,699	14,933,011	21,032,371	-5,230,688 (R)	-6,099,359 (R)	903,361,488	868,061,812	885,015,341	-35,299,676 (G)	-16,953,530 (G)	1,203,931,397	1,260,800,161	-56,868,764 (G)
UB	Undistributed Budget											0	0	
РМВ	Performance Measurement Baseline		14,933,011	21,032,371	-5,230,688 (R)	-6,099,359 (R)	903,361,488	868,061,812	885,015,341	-35,299,676 (G)	-16,953,530 (G)	1,203,931,397	1,260,800,161	-56,868,764 (G)
MR	Management Reserve											8,220,611		
	Totals:	20,163,699	14,933,011	21,032,371	-5,230,688 (R)	-6,099,359	903,361,488	868,061,812	885,015,341	-35,299,676 (G)	-16,953,530 (G)	1,212,152,008	1,260,800,161	-48,648,153



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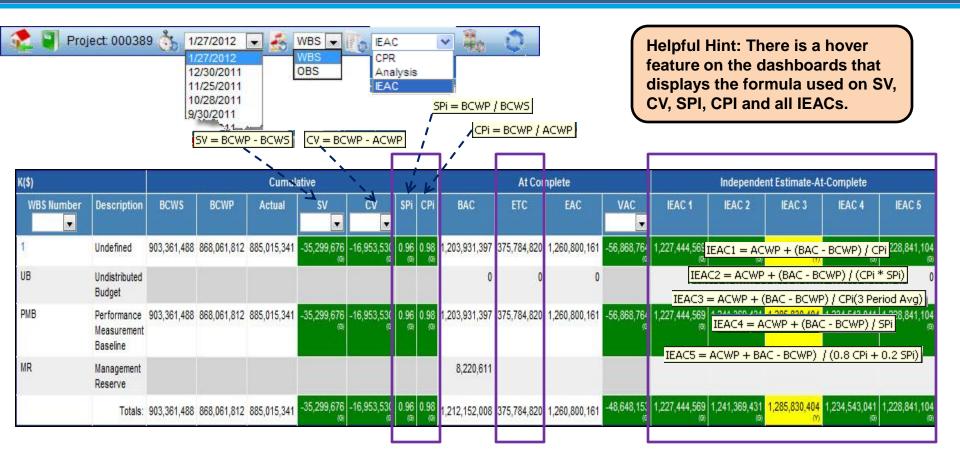


Differences between CPR and Analysis View

- Incremental SPI and Incremental CPI
- Cumulative SPI and Cumulative CPI
- At Complete ETC
- At Complete IEAC1, IEAC2 and IEAC3

CPR Dashboard – IEAC View





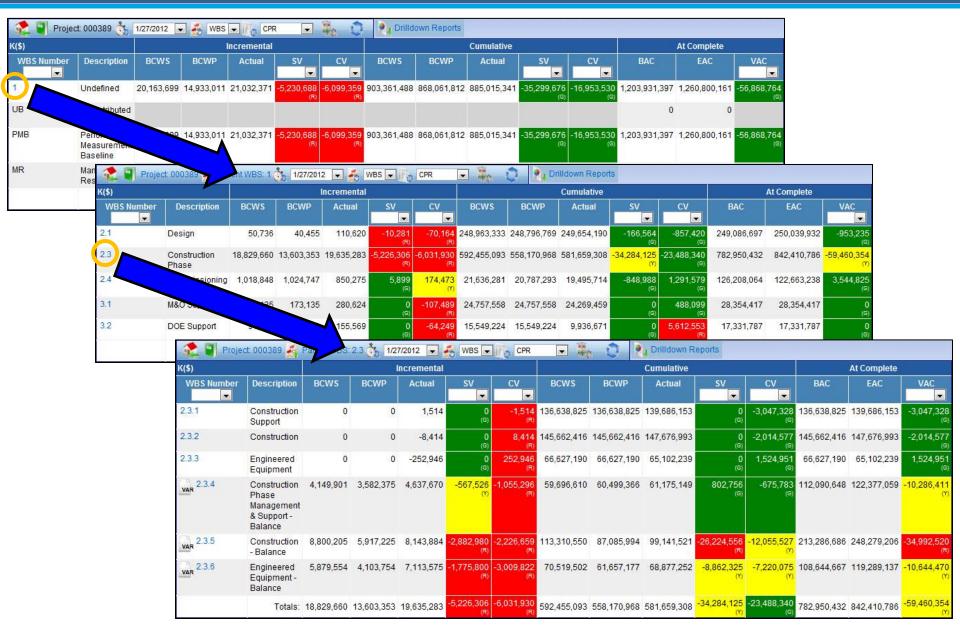
Differences between CPR and IEAC View

- No Incremental Data
- Cumulative SPI and Cumulative CPI
- At Complete ETC
- Independent Estimate-At-Complete IEAC1, IEAC2, IEAC3, IEAC4, IEAC5

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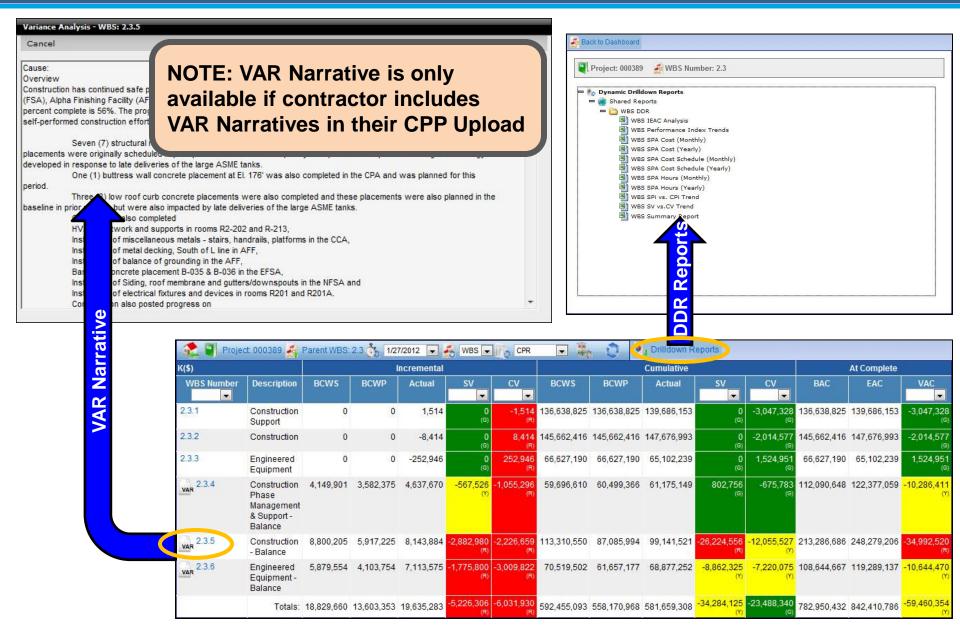
CPR Dashboard – Drill Down





CPR Dashboard – Drill Down

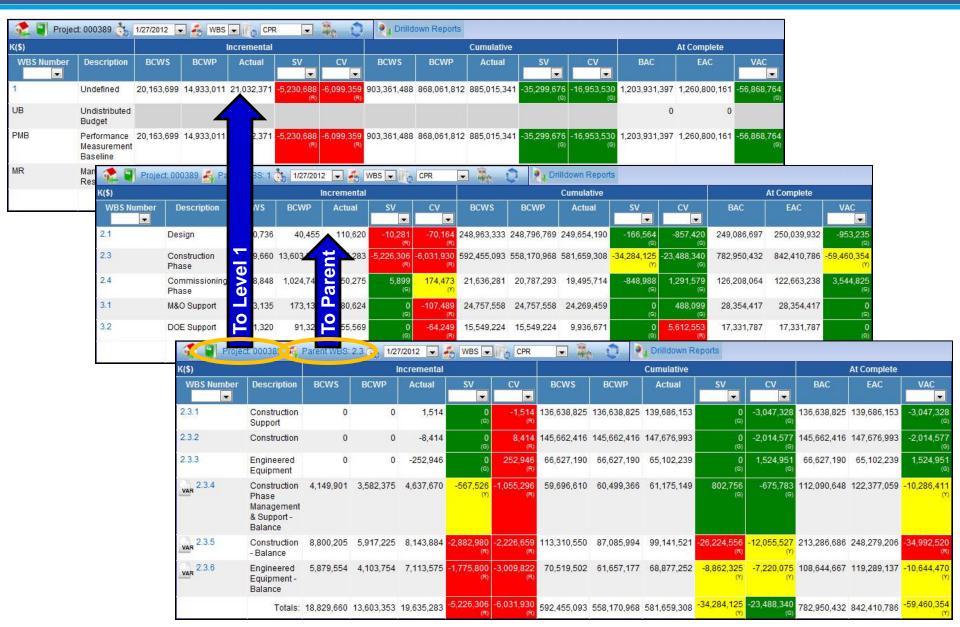




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CPR Dashboard – Drill Down

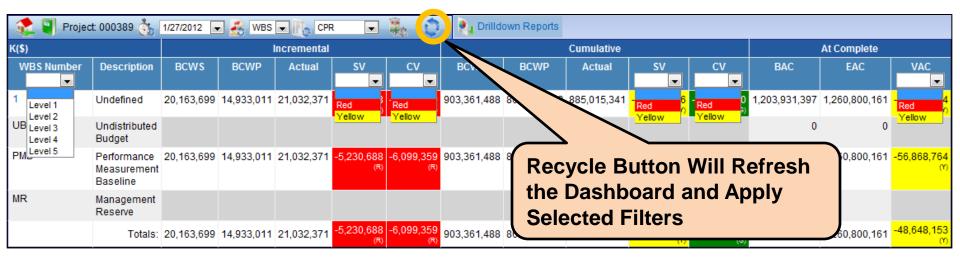




CPR Dashboard – Filtering



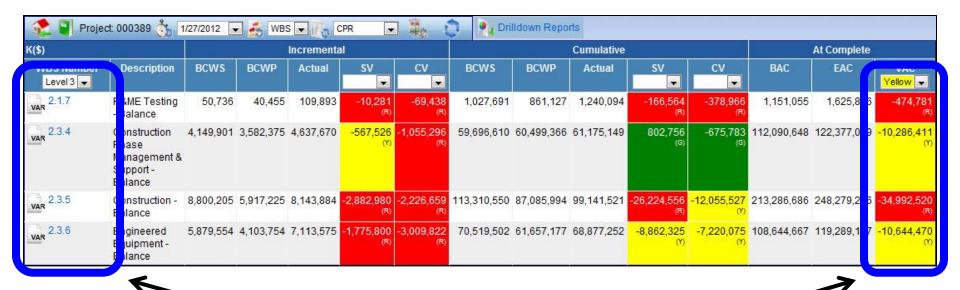
- Filters Available in Dashboard Header
 - WBS/OBS
 - Incremental SV and CV
 - Cumulative SV and CV
 - VAC
- All Levels of WBS/OBS as Uploaded by Contractor
- Yellow Selection Will Display All Red AND Yellow Elements
- Red Selection Will Display Only Red Elements
- Click "Recycle" Button to Apply Filters



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CPR Dashboard – Filtering

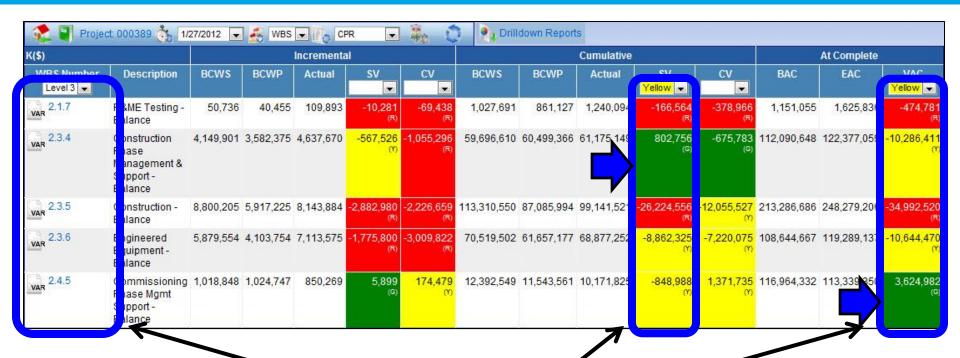




All Level 3 WBS Elements from contractor-provided WBS structure where Variance At Complete (VAR) breached YELLOW threshold.

CPR Dashboard – Filtering





All Level 3 WBS Elements from contractor-provided WBS structure where Variance At Complete (VAR) OR Cumulative Schedule Variance (Cum SV) breached YELLOW threshold.

CPR Dashboard – Filtering



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(\$)		1	Incremental					Cumulati	ive			At Complete			
WRS Number	Description	BCWS	BCWP	Actual	sv	cv	BCWS	BCWP	Actual			cv	BAC	EAC	VAC
Level 3					•					Yellow		•			Yellow ▼
2.1.7	R &ME Testing - B clance	50,736	40,455	109,893	-10,281 (R)	-69,438 (R)		1 861,127	7 1,240,0	1 -166	6,564 (R)	378,966 (R)	1,151,055	1,625,8 6	-474,78 (
2.3.4	Onstruction Flase I anagement & Support - E lance		3,582,375	4,637,670	-567,526 (Y)	-1,055,296 (R)	59,696,610	0 60,499,366	61,175,1	802	2,756 -6	675,783 112 (G)	2,090,648	122,377,0	-10,286,4
2.3.5	onstruction -	8,800,205	5,917,225	8,143,884	-2,882,980 (R)	-2,226,659 (R)	113,310,550	87,085,994	99,141,5	1 -26,224	4,556 - 2,0	55,527 21: (Y)	3,286,686	248,279,2	-34,992,5
2.3.6	E June	5,879,554	4,103,754	7,113,575	1,775,800 (R)	-3,009,822 (R)	70,519,502	61,657,177	68,877,2	2 -8,862	2,325 (m)	20,075 100 m	8,644,667	119,289,1 7	-10,644,4
R 2.4.5	ommissioning Flase Mgmt		924,717	850,269	5,899 (G)	174,479 (Y)	12,392,549	11,543,561	10,171,8	5 -848	8,988 (Y)	71,735 11 ^t	6,964,332	113,339,3	3,624,9
	Project	t 000389 🌉 I	Pare do:	2.3.5	1/27/2012	& WBS	CPR		. 0	Drilldo	own Reports				
	K(\$)		Incremental						C	Cumulative				At Complet	te
	WBS Number	Description	BCWS	BCWP	Actual	SV 🔻	CV E	BCWS E	BCWP	Actual	SV 🔻	CV	BAC	EAC	VA
		Construction Management, Support and ODCs		1 4,694,807	5,212,891	-822,263 (Y)	-518,084 75 (n)	5,565,397 66,	207,771 69	9,085,885	-9,357,626 M	-2,878,113 (G	145,500,3	397 174,861,96)9 -29,36
			991.140	221,669	411,849	-769,471	-190,180 3	3,649,395 1,	1,560,897	2,672,608	-2,088,497 (R)		9,572,4	492 9,482,16	64 9
	2.3.5.2	Yard	551,111				30.50	A25274072724	13,038	13,686	-49	-648	8 576,5(s)	577,39	37
	2.3.5.3	Administration Building		0	0	0 (G)	(G)	13,087	13,030		(9)		_		
	2.3.5.3	Administration			0 2,409,989	(G)	0 (G) -1,493,409 (F)	13,087 7,913,531 17,		5,725,021	(-1	-8,224,036 (R	6 45,757,00 R)	51,338,07	78 -5,58
	2.3.5.3 2.3.5.4 2.3.5.5	Administration Building Process	n 0	1 916,580		(G)	(R)		7,500,985 25		(-1	158,982	R)	030 51,338,07 202 12,019,59	Contract

CPR Dashboard - Thresholds



Understanding Thresholds

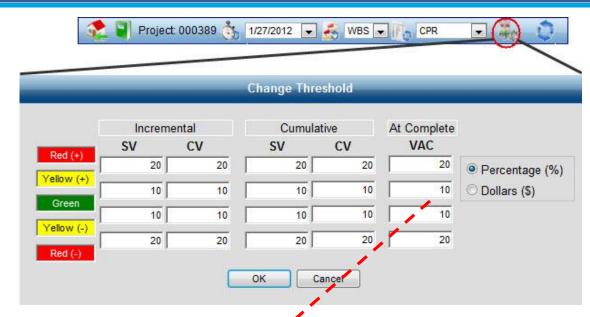
- Not dictated by contract, but is up to each individual User.
- Used for data review and filtering on CPR Dashboard.
- PARS II default thresholds

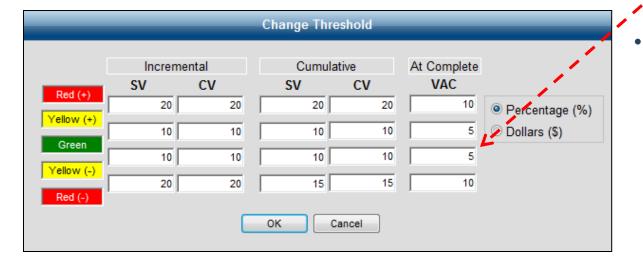
GREEN: ≤ 10%

YELLOW: > 10% AND ≤ 20%

RED: > 20%

No Rounding! 10.1% = YELLOW





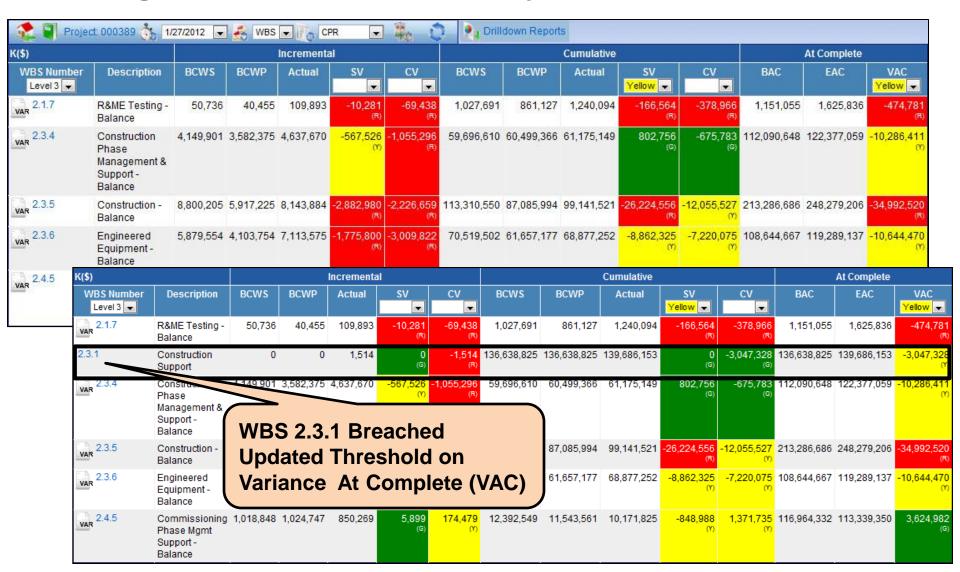
Changing Thresholds

- Change applies to
 ALL projects for ONE user
- Changes save between sessions.
- % v. \$ Thresholds Only one can be viewed at a time.

CPR Dashboards



Change in Thresholds Is Immediately Reflected on the Dashboard



Timephased Dashboard



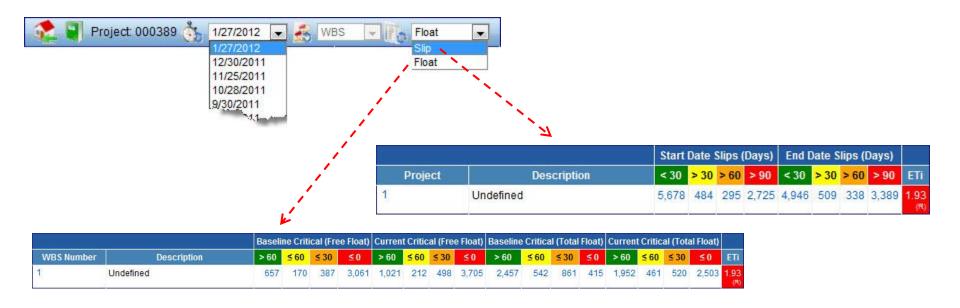
2012 2013																					
WBS Number	Description	Elemen	t Prior	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	ROP	Total
2.1 Desig	Design	S	248,703,063	65,199	65,926	78,409	50,738	45,095	42,598	32,902	2,769										249,086,69
		P	248,630,952	39,951	41,508	43,905	40,455														248,796,7
		A	249,280,687	117,862	75,766	69,255	110,620	1 AND 1885													249,654,1
		EAC	249,280,687	117,882	75,768	69,255	110,620	40,612	40,556	35,917	47,085	57,188	35,406	44,258	35,406	35,406	13,910				250,039,9
	Construction Phase	S	521,163,133	17,224,520	15,453,617	19,784,164	18,829,660	19,534,561	22,340,282	16,771,301	21,756,824	20,324,858	13,137,272	16,199,674	11,422,352	9,333,539	12,062,158	8,980,369	7,587,432	11,044,716	782,950,4
		P	496,092,052	15,624,113	15,554,319	17,297,131	13,603,353														558,170,9
		A	508,480,509	17,103,173	17,643,258	18,797,084	19,635,283														581,659,3
		EAC	508,480,509	17,103,173	17,643,258	18,797,084	19,635,283	22,461,599	24,824,384	18,260,058	16,529,060	18,513,766	12,382,133	17,353,897	14,618,615	11,407,255	14,290,937	9,082,647	9,607,634	71,439,493	842,410,7
	Commissioning	S	17,216,443	1,082,302	1,043,755	1,274,932	1,018,848	994,893	1,244,958	1,257,575	1,307,115	2,460,855	1,948,747	2,613,714	2,347,498	2,449,409	3,473,407	2,924,974	2,910,433	78,640,206	126,208,0
	Phase	P	16,945,929	771,880	791,363	1,253,393	1,024,747														20,787,2
		A	16,139,624	915,443	641,069	949,303	850,275														19,495,7
		EAC	16,139,624	915,443	641,069	949,303	850,275	1,231,388	1,447,394	1,101,173	1,118,211	1,793,269	1,514,844	1,859,766	1,341,355	1,567,962	2,072,179	1,583,726	1,605,263	84,930,995	122,663,2
.1	M&O Support	S	24,034,100	160,768	173 135	218 419	173 135	173 135	216 419	173 135	173 135	218 419	173 135	216 419	173 135	83 022	111 780	89 408	92 801	1 705 138	28 354,41
		Р	24,034,100	160,768										_							5
		Α	23,053,357	312,615	NC	TE:	Dat	a in	the	dasl	hboa	ard i	s on	ılv a	vaila	able	if th	e co	ontr	acto	or 4
		EAC	23,053,357	312,615																	4
.2	DOE Support	S	15,183,524	77,148	inc	clude	es ti	me i	onas	sed a	SPA	data	a in t	tneir	CP	r Uk	loa	a			7
		P	15,183,524	77,148				•													
		Α	9,170,077	175,365	126,005	309,655	155,569									l l			Ų,		9,936,6
			The second second second second second			The second secon															

- Current Functionality
- Available for a fixed number of reporting periods
- Easier to drill down than reviewing reports
- Most useful on WBS elements nearing completion

Schedule Dashboard – Overview



- Contains Contractor Baseline and LRE Schedule
- Provides High-Level Visibility into the Contractor Schedule
- Activities and Milestones Rolled Up to Control Account Level
- Used to Support High-Level Schedule Analysis Not to Replace P6



Schedule Dashboard – Data Overview



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Contractor Reported Data Elements – No Calculations on This Data

- Activity Name Unique activity ID as defined in the contractor schedule
- Activity Description Corresponding activity description
- Org Dur Original Duration as reported in the contractor LRE schedule
- B-Org Dur Original Duration as reported in the contractor baseline schedule
- Act Dur Actual Duration as reported in the contractor LRE schedule
- Rem Dur Remaining Duration as reported in the contractor LRE schedule
- % Activity Physical Percent Complete as reported in the contractor LRE schedule
- ASDATE Actual Start Date as reported in the contractor LRE schedule
- AFDATE Actual Finish Date as reported in the contractor LRE schedule
- ESDATE Early Start Date as reported in the contractor LRE schedule
- EFDATE Early Finish Date as reported in the contractor LRE schedule
- LSDATE Late Start Date as reported in the contractor LRE schedule
- LFDATE Late Finish Date as reported in the contractor LRE schedule
- B-Start Baseline Start Date as reported in the contractor baseline schedule
- B-Finish Baseline Finish Date as reported in the contractor baseline schedule
- Free Float Activity Free Float as reported in the contractor LRE schedule
- Total Float Activity Total Float as reported in the contractor LRE schedule
- Baseline Free Float Activity Free Float as reported in the contractor baseline schedule
- Baseline Total Float Activity Total Float as reported in the contractor baseline schedule
- Critical Flag for activities that are identified as Critical in the contractor LRE schedule

Note:

Contractor's project calendar is not uploaded, so all calculations in the schedule dashboard and schedule reports are based upon calendar days.

Schedule Dashboard – Data Overview



ETi – Elapsed Time Index

- ETi_{activity} = Baseline Duration / Actual Duration
- ETi_{WBS} = Sum of Baseline Durations / Sum of Actual Durations

Slip Start – Number of Calendar Days Start Date Slipped

- Slip Start = (ASDATE or ESDATE) Baseline Start Date
- A negative number indicates an activity started or scheduled to start earlier
- A positive number indicates an activity started or scheduled to start later

Slip Finish – Number of Calendar Days Finish Date Slipped

- Slip Finish = (AFDATE or EFDATE) Baseline Finish Date
- A negative number indicates an activity finished or scheduled to finish early
- A positive number indicates an activity finished or scheduled to finish later
- NOTE: Slips Are Calculated in Calendar Days Not Contractor Working Days

Schedule Dashboard – Slip View





Schedule Dashboard – Float View



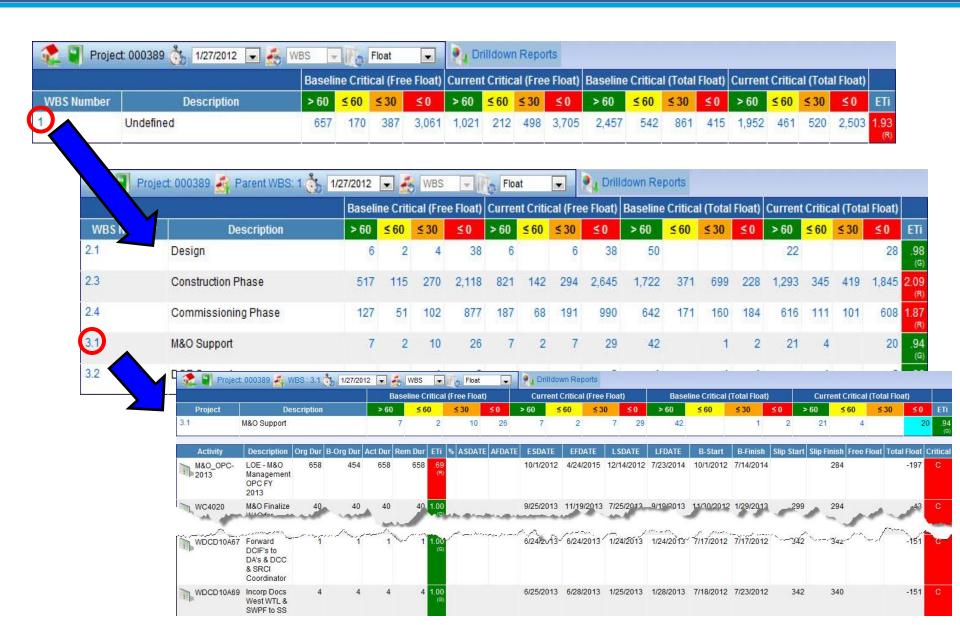
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Schedule Dashboard – Float View

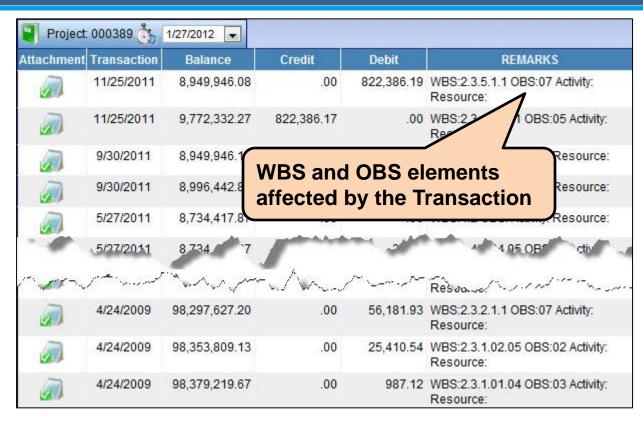


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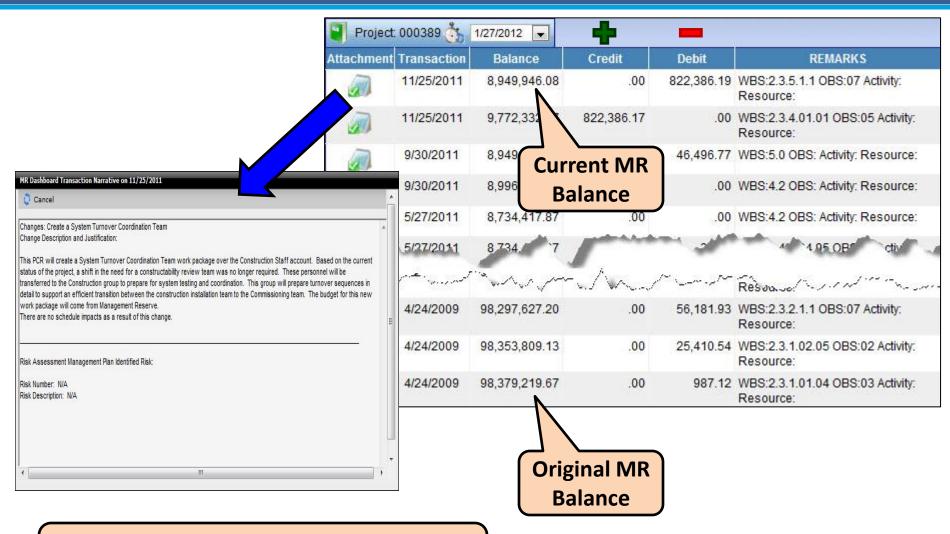
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- Checkbook View of Management Reserve Account
- Transactions Are Tied to Specific Work Element
- Activity and Resource Data Is Not Uploaded into PARS II per DOE Implementation Plan



NOTE: Data in the dashboard only available if contractor includes MR Log data in their CPP Upload

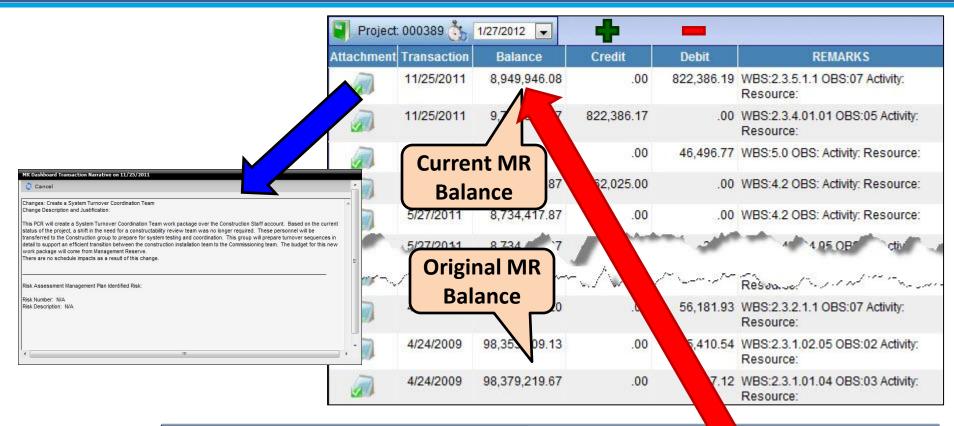


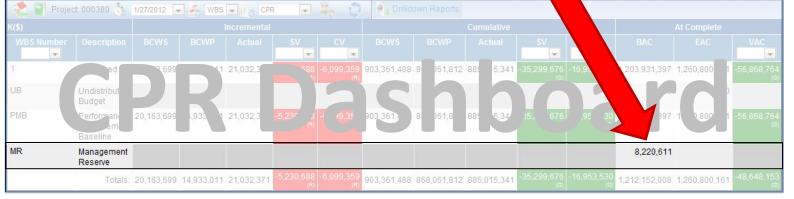


REPORT Location: Analysis Reports folder; Management Reserve (MR) Log

MR Dashboard





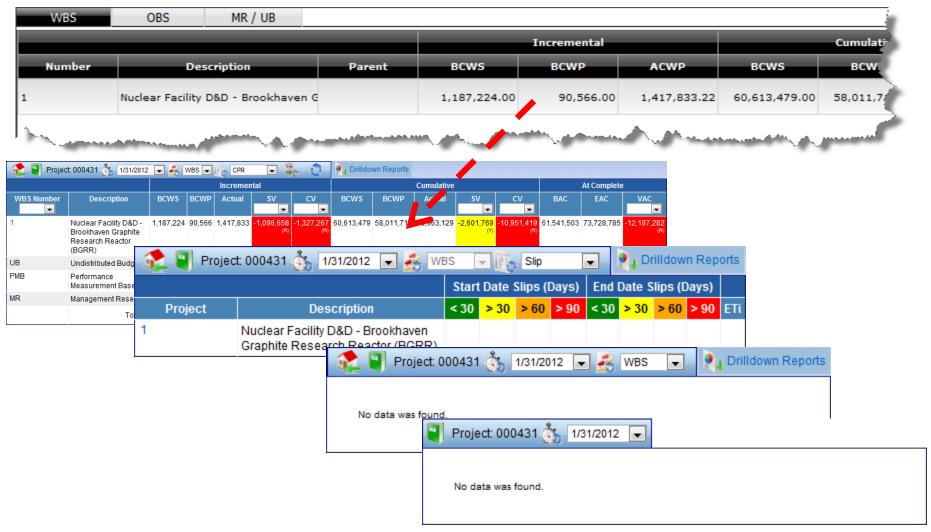


Manual Data Entry – CPR Entry Screen



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- Only Project-Level CPR Dashboard Will Have Data Available
- Drill-down Capability Will Not Be Available



- PARS II Dashboards
 - CPR Dashboard



EVMS Overview

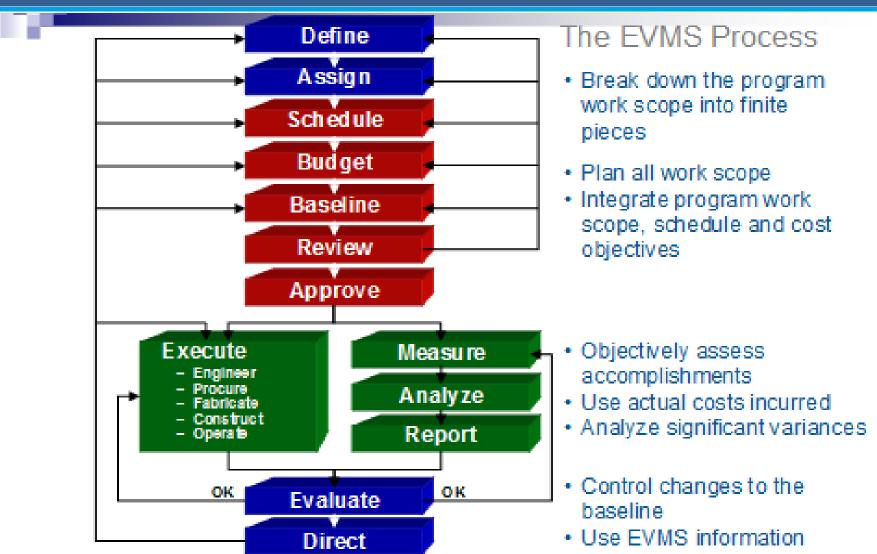


What is an Earned Value Management System?



- An integrated set of
 - Documented Management Processes
 - Management Information Systems
 - Culture (People Roles / Responsibilities)
- Provides reliable and accurate project and program information
- Used to support project management as a decision making tool and a critical component of risk management.

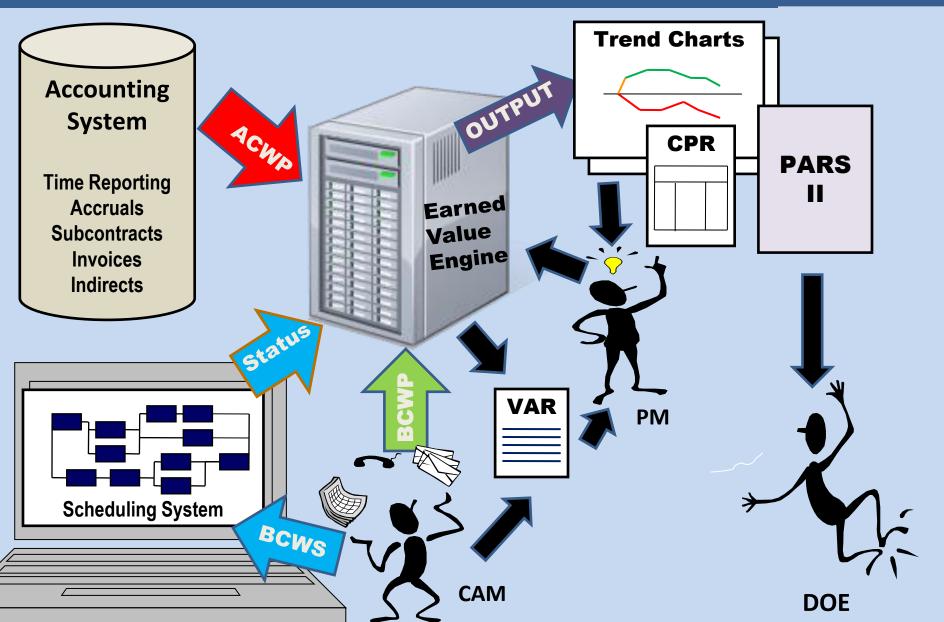




The EVM System I/O







- Department of Energy (DOE) Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, released Nov 10; implementation date May 2011
 - Significant EVMS-related changes:
 - Established thresholds for Certification responsibilities
 - Added a Surveillance requirement
 - Added a Corporate Certification provision
 - Added Notification of Non-Compliance language

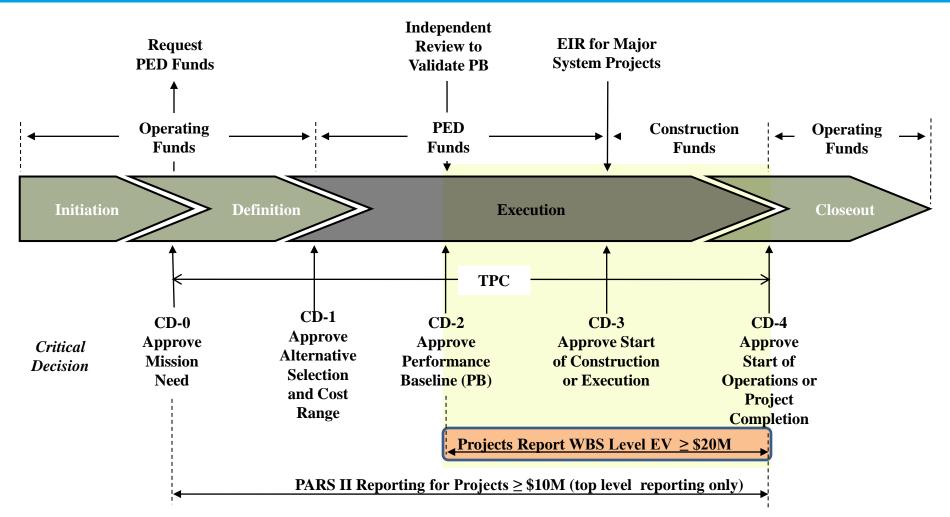


- DOE Guide 413.3-10A, March 13, 2012
- DOE Office of Acquisition and Project Management (APM) Standard Operating Procedures (SOP)
 - EVMS Surveillance SOP issued September 26, 2011

EVMS Requirements Tied to DOE's Acquisition Lifecycle



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Typical DOE Acquisition Management System for Line Item Capital Asset Projects

- The intent of an EVMS Certification/Surveillance process is to:
 - Assess compliance of the EVM System with ANSI/EIA-748 across it's applicable DOE Order 413.3B capital asset projects.
 - Ensure *implementation* of the EVMS to monitor and manage cost, schedule, and technical performance across their entity.
 - Assess maintenance and continued implementation of the EVMS.
 - Provide a documented and defensible *record* for both DOE and the Contractor in support of any future Government Agency assessment of their EVMS or Order 413.3B compliance.

EVMS certification occurs after full completion of the review process

DOE Certification Assessment Process



Readiness Assessment	 After CD-1 "Level-set" expectations 1 Day on-site meeting; two or more months prior to review
Pre-Review Assessment	 After CD-2 Assess policy/procedures, i.e. System Description Review and analyze 3 months of data
On-Site EVMS Review	 CAM and Managerial Interviews Conduct Data Traces Typically 5 days on site
Follow Up Review	 Review CAP Evidence Submittal Assess CAP Implementation Typically 1 to 3 days on site
Certification	 Final Report Certification Letter from Contracting Officer prior to CD-3
Surveillance	 Follows Certification Contractor conducts annual surveillance Internal APM SOP provides for on-going data driven, risk based analysis

- Contractor-proposed EVMS changes require DOE approval prior to implementation per FAR 52.234-4(e) which is incorporated by DOE Order 413.3B, Attachment 1.
- DOE advises the Contractor of the acceptability of such changes within 30 calendar days after receipt of the notice of proposed changes from the Contractor.
 - The DOE Certifying Authority reviews the proposed changes against ANSI/EIA-748B to determine compliance.
 - If so, the changes are recommended for approval to the CO.
 - The implementation verification would be annotated as a possible area of risk, and confirmed based on surveillance activities
 - If the proposed EVMS changes are not considered compliant, the DOE Certifying Authority works with the Contractor to reach agreement. If agreement is not reached, then the CO sends a letter of non-consent.
 - FAR provides for the CO to waive the pre-approval process on a case by case basis. If so granted, the contractor must provide notice 14 days prior to implementation.



What?

 EVMS Certification and Surveillance status is maintained in a Central DOE Repository

Where?

- PARS II

• Who?

- APM is primary responsible for maintaining a repository of the status of all certifications, regardless of certifying authority and dollar thresholds, across DOE projects, sites, and contractors.
- The PMSO, when acting as the certifying authority, provides copies of all deliverables and reports for each certification and surveillance to APM when it is accomplished.
- The FPD ensures copies of contractor self-assessments and annual internal surveillances are provided to APM.
- The Contractor attaches the system description and supporting procedures within PARS II.

Why?

Compliance with Order; Metrics; Auditability

Basics Refresher

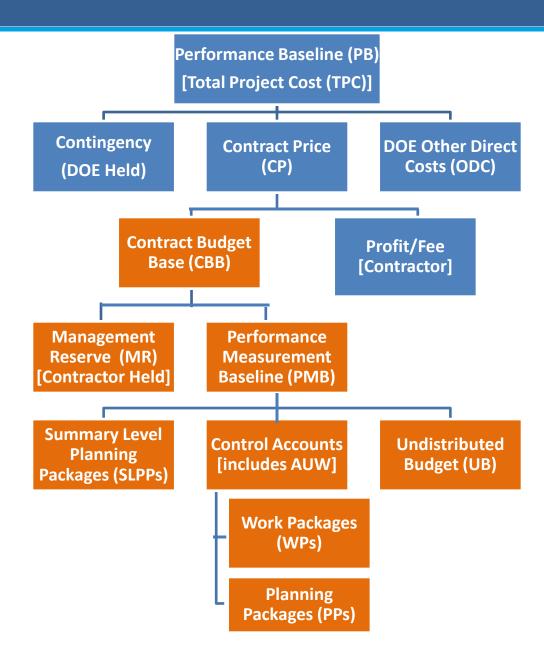


Materials in your Training Packet:

- DOE EVMS Gold Card
- ANSI/EIA-748 Guidelines & Organization Processes Alignment
 - Guidelines grouped by Process Area
 - Cross-process alignment with Business and Management processes
- DOE EVMS Risk Assessment Matrix and instructions



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- American Nat'l Stds Institute/Electronic Industries Alliance (ANSI/EIA) 748-B
- Federal Acquisition Regulations 34.2 and 52.234, Earned Value Mgmt Systems
- DOE Order 413.3B, Program and Project Mgmt for the Acquisition of Capital Assets
- DOE Guide 413.3-10A, Earned Value Management Systems
- DOE Guide 413.3-20, Change Control Management
- DOE APM EVMS Surveillance Standard Operating Procedure
- GAO-09-3SP, GAO Cost Estimating and Assessment Guide Best Practices for Developing and Managing Capital Program Costs, March 2009
- National Defense Industry Association (NDIA) EVMS Guides (Intent 2011, Surveillance 2011, Acceptance 2011, Integrated Baseline Review 2010, Application 2006); http://www.ndia.org/Divisions/Divisions/Procurement/Pages/Program_Management_Systems_Committee.aspx
- Dept. of Defense Earned Value Management Implementation Guide 2006
- OMB Circular A-11, Part 7, Capital Programming Guide

DOE APM EVM Home Page





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EARNED VALUE MANAGEMENT

Aviation Management
Executive
Correspondence
Energy Reduction at
HQ
Facilities and
Infrastructure
Freedom of Information
Act
Financial Assistance
Information Systems
Procurement and
Acquisition

Project Management

Earned Value

Lessons Learned

Reviews and

Validations

Documents and

Publications

Earned Value Management (EVM) is a systematic approach to the integration and measurement of cost, schedule, and technical (scope) accomplishments on a project or task. It provides both the government and contractors the ability to examine detailed schedule information, critical program and technical milestones, and cost data.

- EVMS Surveillance Standard Operating Procedure (ESSOP) 26 Sep 2011 (pdf)
 - EV Guideline Assessment Templates (MS Word)
 - DOE EVMS Cross Reference Checklist (pdf)
 - DOE EVMS Risk Assessment Matrix (MS Word)
- Formulas and Terminology "Gold Card" Sep 2011 (pdf)
- Slides from the OECM Road Show: Earned Value (EV) Analysis and Project Assessment & Reporting System (PARS II) May 2012 (pdf)
- DOE EVM Guidance

EVM TUTORIALS

Module 1 - Introduction to Earned Value (pdf 446.86 kb) July 17, 2003

This module is the introduction to a series of online tutorials designed to enhance your understanding of Earned Value Management. This module's objective is to introduce you to Earned Value and outline the blueprint for the succeeding modules. This module defines Earned Value management. It looks at the differences between Traditional management and Earned Value management, examines how Earned Value management fits into a program and project environment, and defines the framework necessary for proper Earned Value management implementation.

http://energy.gov/management/office-management/operational-management/project-management/earned-value-management

Career Development
Program
Real Estate
History

RCA and CAP



EVMS Surveillance Process



EVMS Surveillance – Why Change?



From:

- Re-certification Approach
- Every two years or at contract midpoint
- To:
 - Risk based, data driven
 - Risk Matrix
 - Portfolio focused
 - Data sources include contractor selfassessments, project peer reviews, Integrated PARS II
- Why would we want to change?
 - Common Goal:
 - Maximize results via continuous, realtime feedback and assistance; benefits all stakeholders
 - Minimize surveillances costs by reducing on-site reviews and disruption to the projects



Risk Approach Based on Best Practices



- "Management's objective should be to select processes based upon the risk associated with the remaining work and content that is specific to the programs being reviewed. The selection of EVM guidelines and processes reviewed should be relevant to the program phase..."
- "The annual program selection process is initiated by reviewing a list of all potential candidate programs to be surveyed. These are selected for surveillance based upon the risk assessed for the remaining work. This selection criterion allows the surveillance process to provide value-added benefits for the program."
- Defense Contract Management Agency (DCMA) EVMS Standard Surveillance Operating Manual (SSOM) 2006
 - Introduced a risk based approach
- Energy Facilities Contractors Operating Group (EFCOG)
 - Addresses a concern from our industry partners



- As we said before "Maximize results via continuous, real-time feedback and assistance; benefits all stakeholders"
- Who are the stakeholders and how does this affect them?
 - APM
 - Incorporates EVMS surveillance into their project analysis roles
 - Ties other types of reviews to EVMS surveillance

- PMSO

- Participates with APM on surveillance review
- Can apply these principles to the PMSO-led reviews

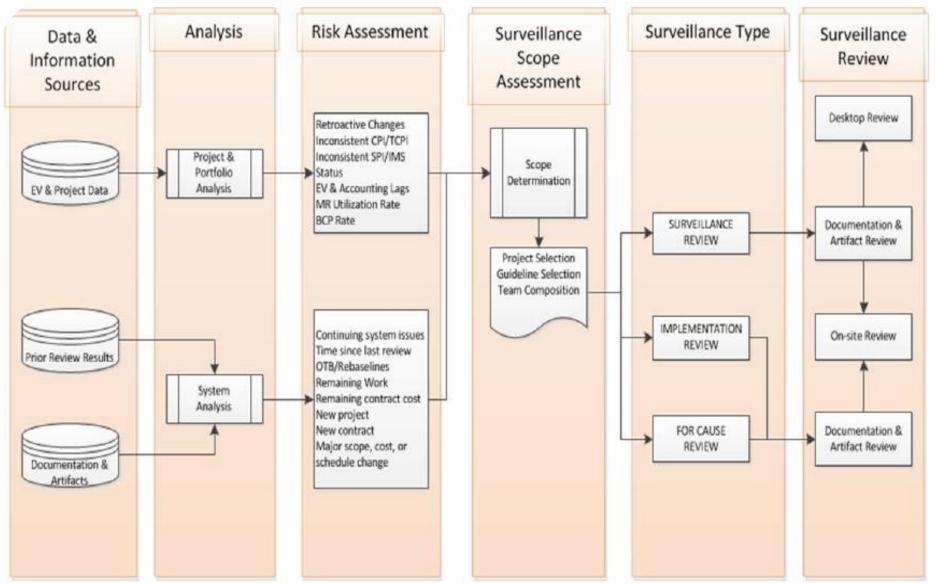
FPD and Project Controls

- Needs to understand how APM conducts business as they support APM during the reviews
- May elect to adopt same risk-based data-driven practices
- More bang for the buck; less disruption to the project

Contractor

- The better they understand the process, the more smoothly the review goes
- They are responsible for internal surveillance and can adopt the same principles
- The new process is less disruptive to the contractor so they can focus on the task at hand







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SURVEILLANCE REVIEW

 Conducted to demonstrate continued compliance of a certified system to the ANSI/EIA 748 guidelines, ensure company processes are being followed, verify the EVM data is useful, timely, and effective, and assess whether the data is used to make informed decisions.

IMPLEMENTATION REVIEW

- Performed in lieu of a Certification Review when EVMS compliance is a requirement. This type review extends a contractor's previously certified system. The extension includes such factors as
 - From one contractor facility to another,
 - From one project to another project after a period of system non-use,
 - From a previously certified system description to a significantly revised system description, and
 - From one <u>certifying entity</u> to another (external, e.g. DoD or CFA to DOE; internal, e.g. PMSO to APM) providing the contracting entity remains the same.

REVIEW FOR CAUSE

- Conducted on a previously Certified System when concerns exist that the output of the EVMS may no longer meet the intent of the guidelines nor is considered valid for decision-making. The primary objectives of the RFC are to:
 - Evaluate the contractor's progress against the corrective action plan;
 - Identify remaining actions required to reaffirm system acceptability;
 - · Ensure accuracy of performance data generated; and
 - Determine if the system validation should be suspended or withdrawn.

Breakdown of the EVMS Surveillance SOP



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Roles and Responsibilities

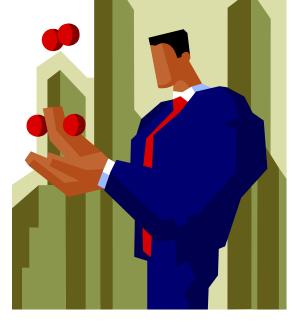
- *APM Project Analyst
- *APM EVM Specialist
- PMSO
- FPD
- Contracting Officer
- Contractor

Process

- Stage 1 Risk Assessment and Monthly Analysis
- Stage 2 Desktop Surveillance
- Stage 3 On-Site Surveillance

Documentation

- Corrective Action Requests and Continuous Improvement Opportunities
- Surveillance Results



*For those PMSOs who are exempt from DOE O 413.3B, the PMSO may choose to fulfill the role of APM.

Surveillance Responsibilities: APM EVM Specialist

- Serves as the APM subject matter expert for surveillance team activities
- Specific responsibilities include:
 - Coordinating surveillance processes
 - To all stakeholders to increase communication, avoid duplication of effort, minimize cost
 - Evaluating contractor proposed changes to certified EVMS
 - Preparing the continued compliance letter for APM Director's signature to the CO
 - Uploading surveillance documents to APM's repository

Surveillance Responsibilities:

APM Project Analyst

- Conduct ongoing project level surveillance and project analysis activities, which includes some or all of the following:
 - Contract Performance Report and Schedule
 - Contract modifications and baseline revisions
 - Management Reserve usage analysis
 - Independent Estimate at Completion
 - Identification of any deficiencies, trends, and data integrity issues
- Coordinating with APM EVM Specialist regarding EVMS issues which are potentially compliance related
- Serves as Lead for the EVMS Surveillance Team
 - Surveillance of all EVMS-applicable projects when a contractor's portfolio includes at least one project with a TPC equal to or greater than \$100M
 - As requested by PMSO or Site

Surveillance Responsibilities: PMSO



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- Leads surveillance activities where the contractor's portfolio includes capital asset projects with at least one TPC equal to or greater than \$50M but none equal to or greater than \$100M
- Provides copies of all surveillance reports to APM
- May request APM to conduct the surveillance

Participates as a team member in APM-led surveillance

activities



Surveillance Responsibilities: FPD / Site Office

- Assesses the results of the contractor surveillance program to determine if additional DOE surveillances are warranted; may request a PMSO led surveillance, or an APM led surveillance (through its program office).
- Encouraged to conduct annual surveillances of the contractor EVMS either separately or jointly with the contractor.
- Conducts periodic physical verifications to ensure that the progress being reported is commensurate with actual progress being incurred, and that the actual costs are being reported.



- Verifies on a monthly basis that the data from the certified EVMS is accurately uploaded into PARS II.
 - Closely monitor areas previously identified by CARs to assess effectiveness of actions to prevent reoccurrence. Repeat findings are of particular concern as they may demonstrate an inherent weakness in the management processes and thus warrant more concentrated surveillance.

Surveillance Responsibilities:

FPD / Site Office

 When the PMSO or APM leads a surveillance review, FPD/Site Office support in accomplishing surveillance is essential.

- This support includes:
 - Keeping the PMSO and APM informed of actions and matters that could affect system surveillance
 - Bringing system and implementation concerns, and data integrity issues to the attention of PMSO and APM
 - Participating as members of the surveillance team as requested
 - Assisting in the resolution of problems cited in surveillance reports

Surveillance Responsibilities:

Contractor

- Develop, implement, and maintain a surveillance plan to include annual surveillance of all 32 guidelines
- Ensure implementation is
 - Done on a consistent basis
 - Used effectively on all applicable projects, and
 - EVMS clauses are flowed down to subcontractors in accordance with the rules applied to the prime.
- Provide documentation of the self-surveillance to





Surveillance Responsibilities: Contracting Officer

Contract:

 Ensures all applicable EVMS regulatory and contractual requirements, FAR clauses, related data item deliverables, and language included

Award Fee:

 Ensures that contractor performance and EVMS health is integrated with the contract award fee determinations

Letter:

 Issues letter to contractor affirming continued compliance of the EVMS following successful closeout of HQ surveillance activities.

Roles and Responsibilities

- APM Project Analyst
- APM EVM Specialist
- PMSO
- FPD
- Contracting Officer
- Contractor

Process

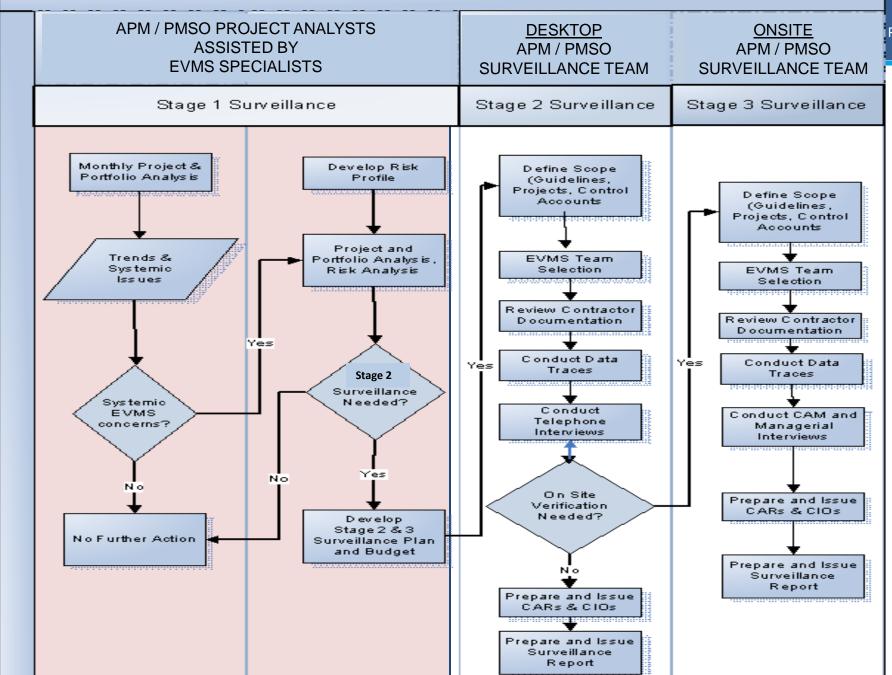
- Stage 1 Risk Assessment and Monthly Analysis
- Stage 2 Desktop Surveillance
- Stage 3 On-Site Surveillance

Documentation

- Corrective Action Requests and Continuous Improvement Opportunities
- Surveillance Results



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Stage 1 Surveillance – On-going Monthly Analysis and Risk Assessment



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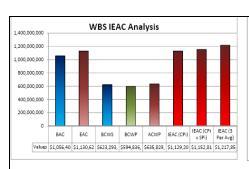
Step 1: Data Analysis

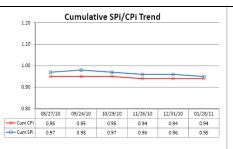
- Conducted in collaboration with APM Project Analysts and EVM Specialist, as well as PMSO, FPD, and project personnel.
- Use PARS II Reports
- Other data sources:
 - Contractor's EVMS self-surveillance documentation
 - Assessments conducted by the FPD, PMSO, and/or APM relative to project performance and EVM system health
- Identify data disconnects, negative trends, and significant changes that may point to systemic issues

Collaboration is an essential part of EVM system surveillance and project analysis.

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- PARS II has a wealth of information to begin the analysis process.
 - Analysis Reports and Project Reports folders
 - More on this subject later . . .





ing the month of January, the project performed below planned (SPI.79) and above cost (CPI.91). Construction of the second riod. Process pipe and support installation began in the Central Processing Area and mechanical installations continued to make good progress on the first level. Facility Support Area concrete

he project continued to be impacted by workarounds in the sequence of walls and decks to mitigate late vendor deliveries. Inclement weather during the period including snow days which closed the avannah River Site for two days, contributed to the schedule slip. Cost performance continues to be negatively impacted by high engineering costs and costs for new tank yendor which are not currently

Prior APM Assessment

completed a review and update to the Risk Assessment and Management Plan (RAMP), and Parsons recently submitted a "bottoms-up" Estimate-at-Completion (EAC) and a revised project chedule incorporating a new construction strategy designed to offset the effects of delayed delivery of major ASME vessels. OECM has not yet been provided with those analyses, which are the topics of ngoing discussions between Parsons and the Federal staff. Although no contract modifications are expected to result from the revised schedule and EAC, the FPD anticipates that an approximately \$70M. ost adjustment will be made as Parsons' Performance Measurement Baseline is adjusted to reflect the new schedule and a number of Contractor and DOE risks that have been realized. Parsons' to go onstruction and commissioning costs are approximately \$479M. The updated bottoms-up EAC, revised schedule and updated RAMP originally scheduled for Jan completion has been returned to Parson

Although the cumulative cost and schedule indices (CPI = .94; SPI = .96) for the project are acceptable, these numbers mask negative cost and schedule trends that should be addressed when the baselin revised.. The monthly CPI's over the past three months (.93,.82,.70) reflect ongoing cost overruns that are largely attributable to increased construction support and vendor support. Throughout much of

Forecast CD4: 10/23/13

ouring the month of December, the project performed below planned (SPI,81) and above cost (CPI,70). The project continued to be impacted by workarounds in the sequence of walls and decks itigate late vendor deliveries. Inclement weather during the period including high wind, very cold temperatures, and rain, contributed to the schedule slip.

Project Quick View Management Report

EV Project Summary (6-Mo: PMB Level)								
Period:	02/25/2011	03/25/2011	04/29/2011					
Cumulative to Date								
BCWS	\$659,657,596.03	\$684,942,413.03	\$713,196,217.79					
BCWP	\$659,862,983.14	\$683,547,978.06	\$705,571,573.85					
ACWP	\$652,688,718.46	\$678,517,746.82	\$699,719,987.07					
sv	\$205,387.11	(\$1,394,434.97)	(\$7,624,643.94)					
SV%	0.03%	-0.20%	-1.07%					
SPi	1.000	0.998	0.989					
CV	\$7,174,264.68	\$5,030,231.24	\$5,851,586.78					
CV%	1.09%	0.74%	0.83%					
CPi	1.011	1.007	1.008					
Current Period								
BCWS	\$36,364,214.15	\$25,284,817.00	\$28,253,804.76					
BCWP	\$65,026,378.23	\$23,684,994.92	\$22,023,595.79					
ACWP	\$16,859,675.33	\$25,829,028.36	\$21,202,240.25					
sv	\$28,662,164.08	(\$1,599,822.08)	(\$6,230,208.97)					
SV%	78.82%	-6.33%	-22.05%					
SPi	1.788	0.937	0.779					
cv	\$48,166,702.90	(\$2,144,033.44)	\$821,355.54					
CV%	74.07%	-9.05%	3.73%					
CPi	3.857	0.917	1.039					
At Complete								
BAC	\$1,202,539,560.15	\$1,202,539,560.15	\$1,202,539,558.84					
EAC	\$1,204,336,082.39	\$1 204 346 002 01	\$1 204 930 270 88					
VAC	(\$1,796,522.24)	(\$1,806,441.86)						
ACi	0.999	0.999						
TCPi (To EAC)	0.984	0.987	0.984					
TCPi (To BAC)	0.987	0.990						
	0.007	3.000	2.000					

BAC	\$1,202,539,560.15	\$1,202,539,560.15	\$1,202,539,558.84
EAC	\$1,204,336,082.39	\$1,204,346,002.01	\$1,204,930,270.88
VAC	(\$1,796,522.24)	(\$1,806,441.86)	(\$2,390,712.04)
ACi	0.999	0.999	0.998
TCPi (To EAC)	0.984	0.987	0.984
TCPi (To BAC)	0.987	0.990	0.988
% Scheduled	54.86%	56.96%	59.31%
% Complete	54.87%	56.84%	58.67%
% Spent	54.28%	56.42%	58.19%
IEAC			

Cum CPi	\$1,189,465,123.01	\$1,193,690,068.59	\$1,192,566,418.13
Cum SPi X Cum Cpi	\$1,189,298,047.49	\$1,194,741,017.94	\$1,197,892,282.57
3 Period Moving Average	\$957.384.034.24	\$967.161.086.04	\$986.456.453.18



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Purpose of the risk ratings

 To assist in prioritizing the EVM surveillance schedule, and to determine depth and scope should Stage 2 surveillance be warranted.

Semi-annually

- Use DOE EVMS Risk Matrix
- Conduct risk assessment to generate a risk profile for the entire portfolio of projects for each contract and/or site
- Based on the EVM risk associated with each project assign relative weights to each risk
- Identify and select projects for additional surveillance

Assessing Project Risk

For EVMS Surveillance purposes:

- APM uses this when at least one of the projects within a contractor's portfolio is > \$100M; applied to all
- Recommended for all who are responsible for EVMS surveillance
- Apply Risk Matrix to each EVMapplicable project within a contractor's portfolio
 - Includes ALL capital asset projects >\$20M
 - Rate each project in each of 14 areas
- Look at results from portfolio perspective to determine where to focus surveillance efforts

DOE EVMS RISK ASSESSMENT MATRIX

EVMS RISK MATI	RIX (rev 05/15/2012)	1,10 1,	DATE: ANALYST:				
CONTRACTOR:		PMSO:			PROJECT:		
RISK	HIGH		MEDIUM		LOW		RISK LEVEL
PROJECT PHASE	PRIOR to CD Organizing, Scheduling, Authorizatio	Work/Budget	EARLY to MID CD-3: Accounting, Material Mgmt, Change Incorporation		LATE CD-3: Managerial Analysis, Change Incorporation		
PM EVM EXPERIENCE	< 2 YRS Organizing, Scheduling Analysis	Managerial	Scheduling.	YRS , Managerial alysis	>5 YRS Managerial Analysis		
CONTRACT BUDGET BASE VALUE	≥\$100M Work/Budget Autho Accounting, Manageri			≤ \$100M Authorization		20M < \$50M Scheduling	
PRIME WORK REMAINING %	> 50% Managerial Analysis Incorporatio		Manageria	50% al Analysis, corporation	Account	<10% ing, Material Mgmt	
SUBCONTRACTOR WORK REMAINING %	> 50% Work/Budget Auth, Scheduling, Subcontract Mgmt, Managerial Analysis		Work/Bue Scheduling,	50% dget Auth, , Subcontract gerial Analysis	Accounting,	< 10% Subcontract Management	
MATERIAL REMAINING %	>30% Work/Budget Auth, Scheduling, Accounting, Material Management		Accountin	30% ag, Material gement	Mate	<15% rial Management	
MANAGEMENT RESERVE REMAINING %	< 5% BCWR Work/Budget Authorization, Change Incorporation		Work/Budget	Authorization,	>10% BCWR Change Incorporation		
BASELINE RESETS	2 OR MORE Work/Budget Authorization, Change Incorporation, Scheduling		Work/Budget	1 Work/Budget Authorization, Organizing		NONE Organizing	
SV%, CV%, OR VAC%	>10% Accounting, Indirect Mgmt, Managerial Analysis		Indirect M	10% anagement, al Analysis	<5% Managerial Analysis		
MISSING SCHEDULE LOGIC	>15% Scheduling, Manageri			15% duling	< 5% Scheduling, Work/Budget Authorization		
BASELINE VOLATILITY	> 15% Change Incorporation,	Accounting	Change Inc	15% corporation, unting	< 5% Managerial Analysis		
CURRENT PERIOD CHANGES	Change Inco	>0% orporation	0% (NEGLIGIBLE) Change Incorporation		BLANK NA		
DATA VALIDITY	CONTINUAL CON Managerial Ana		1	ERIODIC CONCERNS NO CONCE Managerial Analysis NA		O CONCERNS NA	
ONGOING SYSTEMS ISSUES	MULTIPLE UNRE			RESOLVED Processes:	NONE NA		
TIME SINCE LAST REVIEW	>12 MO. All Process Gro	oups	6-12 MO. Processes Not Yet Reviewed		< 6 MO. Follow All Above		



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INSTRUCTIONS FOR EVMS RISK ASSESSMENT MATRIX

PROJECT PHASE: Determine current phase of the project: Prior to CD-3, Early to Mid CD-3, Late CD-3 (less than 6 months to CD-4). See PARS II Project Overview Report.

PM EVM EXPERIENCE: How many years of EVM experience does the Contractor's Program Manager have?

CBB VALUE: What is the value of the CBB (Performance Measurement Baseline plus Management Reserve) for the project? See PARS II Project Overview Report.

PRIME AND SUBCONTRACTOR WORK REMAINING PERCENTAGE: If the CPR data in PARSII is not segregated by 'prime' vs 'subcontractor', then obtain the data from the contractor to determine value of prime vs subcontractor work remaining.

If the data reported in the PARS II uses a WBS structure that allows visibility into prime vs subcontractor effort, then from the BAC and BCWPcum for each (prime, subcontractor), calculate the BCWR using the following formula:

Budgeted cost of work remaining, BCWR = BAC-BCWPcum

Lastly, calculate % of BCWR for each as compared to the total effort remaining.

(Subcontractor % plus prime % equals 100%).

Let's Go Through The Matrix, pg. 2 of 3



MATERIAL REMAINING %: Of total original material budget, what is the percentage of remaining material budget? (Material BAC – Material BCWPcum) / Material BAC Information is available from the contractor's EVMS, either from a) a contractor provided report with a code to designate material cost, or b) by obtaining the entire CPR by element of cost. Note: The contractor should always be able to produce this (GL 9) and we have the access to this data per DOE O 413.3B and FAR 52.2.

MANAGEMENT RESERVE REMAINING %: Calculate MR remaining as a percentage of budgeted cost of work remaining (BCWR). MR / (BAC – BCWP)

BASELINE RESETS: Determine the number of times the baseline has been reset since inception, i.e. variances were eliminated by rebaselining actions. Use the number of external BCPs and single point adjustments (internal BCPs).

SV%, CV%, AND VAC%. Calculate the cum SV%, CV%, and VAC% based on the most recent CPR data and select highest. For high dollar projects, using the 6 or 12 month cum may be more indicative of risk. See PARS II Project Summary Report.

MISSING SCHEDULE LOGIC: Use Schedule Missing Logic (Activity Level) report from PARS II to determine % of missing logic.

BASELINE VOLATILITY: Use the Baseline Volatility - Past and Near-Term (PMB Level) report from PARS II (based on end of period Format 3 baseline plan for next 6 periods) to determine % average percent change of PMB over a six month period (based on last 12 months of data). (choose greater of absolute values of min/max and first/last).

Let's Go Through The Matrix, pg. 3 of 3



CURRENT PERIOD CHANGES: Use the Baseline Volatility – Past and Near-Term (PMB level) report from PARS II to determine the extent of current period changes over the past 6 months. Choose the largest monthly value from the past six months.

DATA VALIDITY: Using the PARS II EV Data Validity (WBS Level) report, review the monthly reports to determine if data validity concerns are (1) continual, periodic, or negligible, and (2) explainable or caused by process issues.

ONGOING SYSTEM ISSUES: Looking at the open EVM-related CARs from previously reviews, how many systemic issues are still unresolved – Multiple, Single, or none? Consider the number of unresolved CARs escalated, if system compliance in jeopardy, or if system compliance has been revoked.

Type affected processes into the pink block spelled exactly as they are in this list:
Organizing, Scheduling, Work/Budget Authorization, Accounting, Indirect Management,
Management & Analysis, Change Incorporation, Material Mgmt, Subcontractor Mgmt.

TIME SINCE LAST REVIEW: How long has it been since this project was last reviewed under System-Level Surveillance? DOE 413-3B requires at least every 24 months. If it has been more than 12 months or is a new contract never reviewed, rate this element as high risk and consider this program/contract for review for all process groups when prioritizing projects for the Annual EVMS System Schedule. Likewise, if it has been 6 to 12 months since last reviewed, then rate this element as moderate risk and consider all processes not yet reviewed as moderate risk.

Risk Matrix: PARS II Baseline Volatility (PMB Level) Report

Average % Change last 6 months



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• This report is used to determine baseline volatility for the past six months and future six months for risk purposes, as well as current period changes for past six months. Current period is month highlighted in white background (Jan 12 in this example).

Baseline Volatility - Past and Near-Term (PMB Level)												
Status							,	·				
Date	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12
Feb-11	\$22,053,172											
Mar-11	\$22,071,598	\$25,977,814										
Apr-11	\$22,025,002	\$24,928,895	\$22,540,488									
May-11	\$20,352,332	\$22,810,561	\$21,725,561	\$23,301,520								
Jun-11	\$20,497,262	\$22,864,798	\$22,117,359	\$22,368,832	\$28,512,005							
Jul-11	\$19,535,214	\$22,234,522	\$20,479,056	\$22,599,274	\$28,554,338	\$18,048,060						
Aug-11	\$19,535,214	\$22,241,215	\$20,473,882	\$22,579,411	\$28,549,625	\$18,040,127	\$19,852,991	\$22,466,075	\$19,782,023	\$17,483,516	\$20,749,204	\$14,057,938
Sep-11		\$22,241,215	\$18,609,937	\$18,886,026	\$23,305,187	\$21,944,475	\$21,404,897	\$26,051,371	\$20,209,828	\$19,036,624	\$23,213,123	\$15,275,412
Oct-11			\$18,609,937	\$16,819,535	\$23,363,093	\$21,834,525	\$22,132,431	\$26,235,504	\$20,214,125	\$19,524,486	\$23,211,418	\$15,273,113
Nov-11				\$16,819,515	\$21,468,073	\$20,165,613	\$20,854,493	\$23,996,126	\$18,363,919	\$23,365,775	\$23,158,116	\$15,362,380
Dec-11					\$21,468,073	\$20,163,699	\$20,852,350	\$23,976,371	\$18,350,942	\$23,356,668	\$23,135,919	\$15,362,551
Jan-12						\$20,163,699	\$20,839,005	\$23,958,408	\$18,326,233	\$23,331,163	\$23,104,038	\$15,337,046
							•		•			
Min	\$19,535,214	\$22,234,522	\$18,609,937	\$16,819,535	\$21,468,073	\$18,040,127	\$19,852,991	\$22,466,075	\$18,326,233	\$17,483,516	\$20,749,204	\$14,057,938
Max	\$22,071,598	\$25,977,814	\$22,540,488	\$23,301,520	\$28,554,338	\$21,944,475	\$22,132,431	\$26,235,504	\$20,214,125	\$23,365,775	\$23,213,123	\$15,362,551
% Change	13%	17%	21%	39%	33%	22%	11%	17%	10%	34%	12%	9%
				verage % Chang	e last 6 months	24%			Av	erage % Change	next 6 months	16%
		_						_				
First	\$22,053,172	\$25,977,814	\$22,540,488	\$23,301,520	\$28,512,005	\$18,048,060	\$19,852,991	\$22,466,075	\$19,782,023	\$17,483,516	\$20,749,204	\$14,057,938
Last	\$19,535,214	\$22,241,215	\$18,609,937	\$16,819,535	\$21,468,073	\$20,163,699	\$20,839,005	\$23,958,408	\$18,326,233	\$23,331,163	\$23,104,038	\$15,337,046
% Change	-11%	-14%	-17%	-28%	-25%	12%	5%	7%	-7%	33%	11%	9%
	Average % Change last 6 months			-14%			Av	verage % Change	next 6 months	10%		
		-						_				
Prior	\$19,535,214	\$22,241,215	\$18,609,937	\$16,819,535	\$21,468,073	\$20,163,699						
Current	\$19,535,214	\$22,241,215	\$18,609,937	\$16,819,515	\$21,468,073	\$20,163,699						
% Change				0%								

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Rationale

 Discrete tasks must be linked (have predecessors and successors) in order to properly calculate the Total Float in the program. If the logic is missing, the true critical path for the program is unknown.

What are the benefits of this metric?

- Helps identify how well or poorly the schedule is linked together
- Even if links exist, the logic still needs to be verified by the technical leads to ensure that the links make sense
- What is the calculation?

All Incomplete Discrete Tasks should be linked

PARS II Schedule Missing Logic (Activity Level) Report



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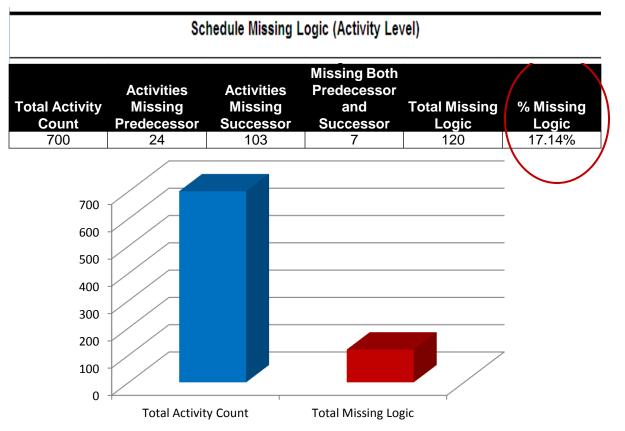
- NOTE: This report currently includes Level Of Effort (LOE) tasks so keep that in mind when using this report to assess schedule health.
- The number of discrete tasks without predecessors and/or successors should not exceed 5%

For Risk purposes, apply these thresholds:

- Low: < 5%

Medium: 5 to 15%

- High: > 15%



Risk Matrix: PARS II EV Data Validity (WBS Level) Report



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EV Data Validity (WBS Level)

CPi/SPi Thresholds

For risk purposes, consider how valid the data has been since the last matrix

No	Fill	<= ±	10%	↑											
Ye	llow	<= ±	20%												
R	ed	> ±	20%												
Cum CPi	Cum SPi	BAC	EAC	VAC	≵ Compl	TCPi to	Negati ve SPA	Inc SPA >	BCWP > BAC	ACMP	CA <	CPi <> TCPi	EAC without BAC	Missin q ETC	Extr ETC
2.45	1.68	650,826	598,941	51,885	16.3%	0.98						1.46			
1.47	0.25	1,265,640	1,265,640		22.5%	0.91						0.56			
0.95	1.00	576,566	577,397	(831)	2.3%	1.00									
0.95	1.00	576,566	577,397	(831)	2.3%	1.00									
0.68	0.63	45,757,030	51,338,078	(5,581,048)	38.2%	1.10				×	×	-0.42			
1.01	0.89	1,774,836	1,774,836		85.7%	0.94						0.07			
0.66	0.62	39,789,451	45,161,553	(5,372,102)	38.9%	1.12				×	×	-0.47			
0.73	0.43	4,192,742	4,401,689	(208,947)	11.9%	0.99						-0.26			
1.10	0.29	11,880,202	12,019,599	(139,397)	15.2%	0.97						0.13			
1.33	0.28	5,293,824	5,296,010	(2,186)	20.3%	0.94						0.39			
0.87	0.32	6,586,378	6,723,589	(137,211)	11.0%	0.99						-0.12			
0.90	0.87	108,644,667	119,289,137	(10,644,470)	56.8%	0.93									
1.01	0.84	10,072,341	12,415,920	(2,343,579)	45.6%	0.70						0.32			
1.05	1.02	5,293,336	5,138,403	154,933	60.0%	1.01	Inc ACWP								
0.98	0.86	686,912	912,134	(225,222)	84.7%	0.33	Inc BCWP					0.66			
0.83	0.80	45,655,349	54,945,426	(9,290,077)	78.4%	0.85	Inc BCWP								
1.01	1.05	30,807,704	30,625,294	182,410	51.3%	1.01									
1.01	1.26	8,274,196	7,397,130	877,066	20.7%	1.15	Inc ACWP					-0.15			
		3000000	3000000			4.00	 							$\overline{}$	

Risk Matrix: PARS II EV Project Summary (6-Mo; PMB Level) Report



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For risk purposes, determine SV%, CV%, and VAC%.

EV Project Summary (6-Mo; PMB Level)

Period:	08/26/2011	09/30/2011	10/28/2011	11/25/2011	12/30/2011	01/27/2012
Cumulative to Date						
BCWS	\$804,059,048.57	\$826,300,263.63	\$844,910,200.20	\$861,729,715.47	\$883,197,788.38	\$903,361,487.84
BCWP	\$779,698,227.98	\$800,886,557.41	\$817,560,396.98	\$834,203,802.54	\$853,128,800.22	\$868,061,811.56
ACWP	\$778,151,089.23	\$806,124,254.16	\$824,748,712.25	\$843,465,867.50	\$863,982,970.58	\$885,015,341.10
sv	(\$24,360,820.59)	(\$25,413,706.22)	(\$27,349,803.22)	(\$27,525,912.93)	(\$30,068,988.16)	(\$35,299,676.28)
SV%	-3.03%	-3.08%	-3.24%	-3.19%	-3.40%	-3.91%
SPi	0.970	0.969	0.968	0.968	0.966	0.961
CV	\$1,547,138.75	(\$5,237,696.75)	(\$7,188,315.27)	(\$9,262,064.96)	(\$10,854,170.36)	(\$16,953,529.54)
CV%	0.20%	-0.65%	-0.88%	-1.11%	-1.27%	-1.95%
СРі	1.002	0.994	0.991	0.989	0.987	0.981
Current Period						
BCWS	\$19,535,214.17	\$22,241,215.06	\$18,609,936.57	\$16,819,515.27	\$21,468,072.91	\$20,163,699.46
BCWP	\$16,818,233.35	\$21,188,329.43	\$16,673,839.57	\$16,643,405.56	\$18,924,997.68	\$14,933,011.34
ACWP	\$19,651,011.21	\$27,973,164.93	\$18,624,458.09	\$18,717,155.25	\$20,517,103.08	\$21,032,370.52
SV	(\$2,716,980.82)	(\$1,052,885.63)	(\$1,936,097.00)	(\$176,109.71)	(\$2,543,075.23)	(\$5,230,688.12)
SV%	-13.91%	-4.73%	-10.40%	-1.05%	-11.85%	-25.94%
SPi	0.861	0.953	0.896	0.990	0.882	0.741
CV	(\$2,832,777.86)	(\$6,784,835.50)	(\$1,950,618.52)	(\$2,073,749.69)	(\$1,592,105.40)	(\$6,099,359.18)
CV%	-16.84%	-32.02%	-11.70%	-12.46%	-8.41%	-40.84%
CPi	0.856	0.757	0.895	0.889	0.922	0.710
At Complete						
BAC	\$1,203,751,397.79	\$1,203,931,397.00	\$1,203,931,397.00	\$1,203,931,397.08	\$1,203,931,397.09	\$1,203,931,397.10
EAC	\$1,240,720,762.53	\$1,241,124,701.21	\$1,246,412,143.24	\$1,251,302,179.13	\$1,260,800,606.00	\$1,260,800,160.88
VAC	(\$36,969,364.74)	(\$37,193,304.21)	(\$42,480,746.24)	(\$47,370,782.05)	(\$56,869,208.91)	(\$56,868,763.78)
VAC%	-3.07%	-3.09%	-3.53%	-3.93%	-4.72%	-4.72%
ACi	0.970	0.970	0.966	0.962	0.955	0.955
TCPi (To EAC)	0.917	0.927	0.916	0.907	0.884	0.894
TCPi (To BAC)	0.996	1.013	1.019	1.026	1.032	1.053
% Scheduled	66.80%	68.63%	70.18%	71.58%	73.36%	75.03%
% Complete	64.77%	66.52%	67.91%	69.29%	70.86%	72.10%
% Spent	64.64%	66.96%	68.50%	70.06%	71.76%	73.51%
IEAC						
Cum CPi	\$1,201,362,819.28	\$1,211,804,956.00	\$1,214,516,839.34	\$1,217,298,503.26	\$1,219,248,751.85	\$1,227,444,568.90
Cum SPi X Cum Cpi	\$1,214,585,608.12	\$1,224,678,002.85	\$1,227,555,731.17	\$1,229,633,719.85	\$1,231,770,287.36	\$1,241,369,430.85
3 Period Moving Average	\$1,242,988,255.20	\$1,299,373,471.51	\$1,292,860,685.78	\$1,286,515,519.81	\$1,252,499,750.87	\$1,285,830,403.85



Let's do some Risk Matrix calculations.

 Take out your calculators, sharpen your pencils, here we go.

Exercise 1: EVMS Risk Matrix, pg 1 of 7



Complete the Risk Matrix Form by putting an High (H), Medium (M), or Low (L) in the far right column to designate which risk area you chose based on the data provided.

Attached are the forms you will need to complete this exercise. These include:

- DOE EVMS Risk Matrix Form
- PARS II Project Overview
- PARS II Analysis Report: EV Project Summary (6-mo; PMB Level)
- PARS II Analysis Report: Baseline Volatility Past and Near-Term (PMB Level)
- PARS II Analysis Report: Schedule Missing Logic (Analysis Level)

In addition to the above PARS II reports, there would be other data you would gather based on your project knowledge or from working with the FPD's staff. Since this is an exercise, that information is provided below.

- 1. Contractor's PM EVM Experience: 7 years
- 2. The percentage of work remaining for the Prime is 60%, the percentage of work remaining for the Subcontractor is 40%.
- 3. On this project the Material budget at completion is \$500,000 and the Material BCWPcum is \$250,000.
- 4. In addition to the BCPs, there have been 2 single point adjustments. (Hint: The number of BCPs is noted on one of the attached PARS II reports.)
- 5. During the 12 months, there were data validity issues in two of the months.
- 6. Three unresolved CARs; GLs 3, 6, and 21
- 7. Contractor's EVMS was Certified in 2010; no HQ surveillances to date.

Exercise 1: EVMS Risk Matrix, pg 2 of 7



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DOE EVMS RISK ASSESSMENT MATRIX

EVMS RISK MATI	EVMS RISK MATRIX (rev 05/15/2012) DATE: ANALYST:							
CONTRACTOR:		PMSO:	PROJECT:					
RISK	HIGH	MEDIUM	LOW	RISK LEVEL				
PROJECT PHASE	PRIOR to CD-3: Organizing, Scheduling, Work/Budget Authorization	EARLY to MID CD-3: Accounting, Material Mgmt, Change Incorporation	LATE CD-3: Managerial Analysis, Change Incorporation					
PM EVM EXPERIENCE	< 2 YRS Organizing, Scheduling, Managerial Analysis	2 – 5 YRS Scheduling, Managerial Analysis	> 5 YRS Managerial Analysis					
CONTRACT BUDGET BASE VALUE	≥ \$100M Work/Budget Authorization, Accounting, Managerial Analysis	\$50M ≤ \$100M Work/Budget Authorization	\$20M < \$50M Scheduling					
PRIME WORK REMAINING %	> 50% Managerial Analysis, Change Incorporation	10 - 50% Managerial Analysis, Change Incorporation	< 10% Accounting, Material Mgmt					
SUBCONTRACTOR WORK REMAINING %	> 50% Work/Budget Auth, Scheduling, Subcontract Mgmt, Managerial Analysis	10 – 50% Work/Budget Auth, Scheduling, Subcontract Mgmt, Managerial Analysis	< 10% Accounting, Subcontract Management					
MATERIAL REMAINING %	>30% Work/Budget Auth, Scheduling, Accounting, Material Management	15 – 30% Accounting, Material Management	< 15% Material Management					
MANAGEMENT RESERVE REMAINING %	< 5% BCWR Work/Budget Authorization, Change Incorporation	5 – 10% BCWR Work/Budget Authorization, Change Incorporation	> 10% BCWR Change Incorporation					
BASELINE RESETS	2 OR MORE Work/Budget Authorization, Change Incorporation, Scheduling	1 Work/Budget Authorization, Organizing	NONE Organizing					
SV%, CV%, OR VAC%	> 10% Accounting, Indirect Mgmt, Managerial Analysis	5 - 10% Indirect Management, Managerial Analysis	< 5% Managerial Analysis					
MISSING SCHEDULE LOGIC	>15% Scheduling, Managerial Analysis	5 – 15% Scheduling	< 5% Scheduling, Work/Budget Authorization					
BASELINE VOLATILITY	> 15% Change Incorporation, Accounting	5 - 15% Change Incorporation, Accounting	< 5% Managerial Analysis					
CURRENT PERIOD CHANGES	>0% Change Incorporation	0% (NEGLIGIBLE) Change Incorporation	BLANK NA					
DATA VALIDITY	CONTINUAL CONCERNS Managerial Analysis	PERIODIC CONCERNS Managerial Analysis	NO CONCERNS NA					
ONGOING SYSTEMS ISSUES	MULTIPLE UNRESOLVED Affected Processes:	SINGLE UNRESOLVED Affected Processes:	NONE NA					
TIME SINCE LAST REVIEW	>12 MO. All Process Groups	6 -12 MO. Processes Not Yet Reviewed	< 6 MO. Follow All Above					



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INSTRUCTIONS FOR EVMS RISK ASSESSMENT MATRIX

COMPLETE ALL AREAS IN BLUE.

PROJECT PHASE: Determine current phase of the project: Prior to CD-3, Early to Mid CD-3, Late CD-3 (less than 6 months to CD-4). See PARS II Project Overview Report.

PM EVM EXPERIENCE: How many years of EVM experience does the Contractor's Program Manager have?

CBB VALUE: What is the value of the CBB (Performance Measurement Baseline plus Management Reserve) for the project? See PARS II Project Overview Report.

PRIME AND SUBCONTRACTOR WORK REMAINING PERCENTAGE: If the CPR data in PARSII is not segregated by 'prime' vs 'subcontractor', then obtain the data from the contractor to determine value of prime vs subcontractor work remaining.

If the data reported in the PARS II uses a WBS structure that allows visibility into prime vs subcontractor effort, then from the BAC and BCWPcum for each (prime, subcontractor), calculate the

BCWR using the following formula: Budgeted cost of work remaining, BCWR = BAC-BCWPcum Lastly, calculate % of BCWR for each as compared to the total effort remaining. (Subcontractor % plus prime % equals 100%).

MATERIAL REMAINING %: Of total original material budget, what is the percentage of remaining material budget? (Material BAC – Material BCWPcum)/ Material BAC Information is available from the contractor's EVMS, either from a) a contractor provided report with a code to designate material cost, or b) by obtaining \ the entire CPR by element of

cost. Note: The contractor should always be able to produce this (GL 9) and we have access to this data per DOE O 413.3B and FAR 52.2.

MANAGEMENT RESERVE REMAINING %: Calculate MR remaining as a percentage of budgeted cost of work remaining (BCWR). MR / (BAC-BCWPcum)

BASELINE RESETS: Determine the number of times the baseline has been reset since inception, i.e. variances were eliminated by rebaselining actions. Use the number of external BCPs and single point adjustments (internal BCPs).

SV%, CV%, AND VAC%. Calculate the cum SV%, CV%, and VAC% based on the most recent CPR data and select highest. For high dollar projects, using the 6 or 12 month cum may be more indicative of risk. See PARS II Project Summary Report.

MISSING SCHEDULE LOGIC: Use Schedule Missing Logic (Activity Level) report from PARS II to determine % of missing logic

BASELINE VOLATILITY: Use the Baseline Volatility - Past and Near-Term (PMB Level) report from PARS II (based on end of period Format 3 baseline plan for next 6 periods) to determine % average percent change of PMB over a six month period (based on last 12 months of data). (choose greater of absolute values of min/max and first/last).

CURRENT PERIOD CHANGES: Use the Baseline Volatility – Past and Near-Term (PMB Level) report from PARS II to determine the extent of current period changes over the past 6 months. Choose the largest monthly value from the past six months.

DATA VALIDITY: Using the PARS II EV Data Validity (WBS Level) report, review the monthly reports to determine if the validity concerns are (1) continual, periodic, or negligible, and (2)

explainable or caused by process issues.

ONGOING SYSTEM ISSUES: Looking at the open EVM-related CARs from previous reviews, how many systemic issues are still unresolved – Multiple, Single, or none? Consider the number of unresolved CARs escalated, if system compliance in jeopardy, or if system compliance has been revoked.

Type affected processes into the pink block spelled exactly as they are in this list: Organizing, Scheduling, Work/Budget Authorization, Accounting, Indirect Management, Management and Analysis, Change Incorporation, Material Management, Subcontractor Management.

TIME SINCE LAST REVIEW: How long has it been since this project was last reviewed under System-Level Surveillance? DOE O 413.3B requires at least every 24 months. If it has been more than 12 months or is a new contract never reviewed, rate this element as high risk and consider this program/contract for review for all process groups when prioritizing projects for the Annual EVMS System Schedule. Likewise, if it has been 6 to 12 months since last reviewed, then rate this element as moderate risk and consider all processes not yet reviewed as moderate risk.

Exercise 1: EVMS Risk Matrix, pg 4 of 7



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Project Overview

Project Identification

Points of Contact

PARS II Project ID: 111

DOE Project No: 11-D-111

Project Name: Germantown

Federal Project Director

Critical Decisions

Current CD: CD3
Current BCP: BCP-01

CD3 Approved By: John Doe BCP-01 Approved By: John Doe

TPC (Approved): \$1,339,000,000 **CD4 Date (Approved):** Oct 2015

	Planned Dates	Approved Dates
CD0:	n/a	Jun 2001
CD1:	n/a	Aug 2004
CD2:	n/a	Sep 2007
CD3:	n/a	Jan 2009
CD3A:	Sep 2007	Sep 2007
CD4:	Oct 2015	
Closeout:	n/a	

Current Assessments - POST CD-2

Current DOE Assessment Period: March 2012

FPD Assessment: Yellow
Change from Prior: No

Get to Green Estimate: June 2012

FPD Forecasted TPC: \$1,305,000,000

FPD Forecasted CD4: Apr 2015

APM Assessment: Yellow
of Months at Red: 37

OECM Forecasted TPC: \$1,339,000,000 OECM Forecasted CD4: Oct 2015

Performance Baseline - POST CD-2

Low High **CD1 TPC Range:** \$375,000,000 \$400,000,000

Original CD2 TPC: \$900,000,000

Latest Approved TPC: \$1,339,000,000

APM Forecasted TPC: \$1,305,000,000

FPD Forecasted TPC: \$1,305,000,000

Actual CD4 TPC:

Original CD4: Nov 2013
Latest Approved CD4: Oct 2015
APM Forecasted CD4: Oct 2015
FPD Forecasted CD4: Apr 2015
CD4 Approved Date:

Scope (KPPs): 3 KPP(s) entered.

See PROJECT KPPs for details.

Performance Snapshot - POST CD-2

EV Performance Period: January 2012

* Cum CPi/SPi Based on Performance Since 12/08/2008

Cum CPi: 0.98 **Cum SPi:** 0.96 **% Complete:** 72%

	At BCP-01	Remaining		
Contingency (\$):	\$116,800,000	\$114,360,097		
Contingency (Days):	420 days	226 days		
DOE ODCs:	\$45,500,000	\$0		
Profit/Fee:	\$61,800,000	\$13,032,096		
Contractor MR:	\$158,000,000	\$8,220,611		

	At BCP-01	Current
Contractor PMB:	\$957,000,000	\$1,203,931,397
Contractor EAC:		\$1,260,800,161

IEAC1	IEAC2	IEAC3
AC + (BCWR / CPi)	AC + BCWR / CPi * SPi	AC + (BCWR / Avg CPi)
\$1,227,444,569	\$1,241,369,431	\$1,285,830,404

Exercise 1: EVMS Risk Matrix, pg 5 of 7



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EV Project Summary (6-Mo; PMB Level)

Period:	08/26/2011	09/30/2011	10/28/2011	11/25/2011	12/30/2011	01/27/2012
Cumulative to Date						
BCWS	\$804,059,048.57	\$826,300,263.63	\$844,910,200.20	\$861,729,715.47	\$883,197,788.38	\$903,361,487.84
BCWP	\$779,698,227.98	\$800,886,557.41	\$817,560,396.98	\$834,203,802.54	\$853,128,800.22	\$868,061,811.56
ACWP	\$778,151,089.23	\$806,124,254.16	\$824,748,712.25	\$843,465,867.50	\$863,982,970.58	\$885,015,341.10
sv	(\$24,360,820.59)	(\$25,413,706.22)	(\$27,349,803.22)	(\$27,525,912.93)	(\$30,068,988.16)	(\$35,299,676.28)
SV%	-3.03%	-3.08%	-3.24%	-3.19%	-3.40%	-3.91%
SPi	0.970	0.969	0.968	0.968	0.966	0.961
cv	\$1,547,138.75	(\$5,237,696.75)	(\$7,188,315.27)	(\$9,262,064.96)	(\$10,854,170.36)	(\$16,953,529.54)
CV%	0.20%	-0.65%	-0.88%	-1.11%	-1.27%	-1.95%
СРі	1.002	0.994	0.991	0.989	0.987	0.981
Current Period	·				•	•
BCWS	\$19,535,214.17	\$22,241,215.06	\$18,609,936.57	\$16,819,515.27	\$21,468,072.91	\$20,163,699.46
BCWP	\$16,818,233.35	\$21,188,329.43	\$16,673,839.57	\$16,643,405.56	\$18,924,997.68	\$14,933,011.34
ACWP	\$19,651,011.21	\$27,973,164.93	\$18,624,458.09	\$18,717,155.25	\$20,517,103.08	\$21,032,370.52
sv	(\$2,716,980.82)	(\$1,052,885.63)	(\$1,936,097.00)	(\$176,109.71)	(\$2,543,075.23)	(\$5,230,688.12)
SV%	-13.91%	-4.73%	-10.40%	-1.05%	-11.85%	-25.94%
SPi	0.861	0.953	0.896	0.990	0.882	0.741
CV	(\$2,832,777.86)	(\$6,784,835.50)	(\$1,950,618.52)	(\$2,073,749.69)	(\$1,592,105.40)	(\$6,099,359.18)
CV%	-16.84%	-32.02%	-11.70%	-12.46%	-8.41%	-40.84%
СРі	0.856	0.757	0.895	0.889	0.922	0.710
At Complete						
BAC	\$1,203,751,397.79	\$1,203,931,397.00	\$1,203,931,397.00	\$1,203,931,397.08	\$1,203,931,397.09	\$1,203,931,397.10
EAC	\$1,240,720,762.53	\$1,241,124,701.21	\$1,246,412,143.24	\$1,251,302,179.13	\$1,260,800,606.00	\$1,260,800,160.88
VAC	(\$36,969,364.74)	(\$37,193,304.21)	(\$42,480,746.24)	(\$47,370,782.05)	(\$56,869,208.91)	(\$56,868,763.78)
VAC%	-3.07%	-3.09%	-3.53%	-3.93%	-4.72%	-4.72%
ACi	0.970	0.970	0.966	0.962	0.955	0.955
TCPi (To EAC)	0.917	0.927	0.916	0.907	0.884	0.894
TCPi (To BAC)	0.996	1.013	1.019	1.026	1.032	1.053
% Scheduled	66.80%	68.63%	70.18%	71.58%	73.36%	75.03%
% Complete	64.77%	66.52%	67.91%	69.29%	70.86%	72.10%
% Spent	64.64%	66.96%	68.50%	70.06%	71.76%	73.51%
IEAC						
Cum CPi	\$1,201,362,819.28	\$1,211,804,956.00	\$1,214,516,839.34	\$1,217,298,503.26	\$1,219,248,751.85	\$1,227,444,568.90
Cum SPi X Cum Cpi	\$1,214,585,608.12	\$1,224,678,002.85	\$1,227,555,731.17	\$1,229,633,719.85	\$1,231,770,287.36	\$1,241,369,430.85
3 Period Moving Average	\$1,242,988,255.20	\$1,299,373,471.51	\$1,292,860,685.78	\$1,286,515,519.81	\$1,252,499,750.87	\$1,285,830,403.85

Exercise 1: EVMS Risk Matrix, pg 6 of 7



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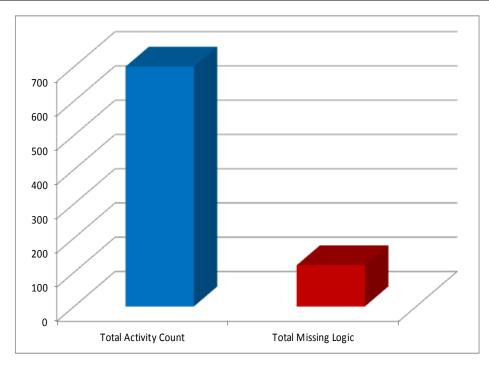
	Baseline Volatility - Past and Near-Term (PMB Level)											
Status							,					
Date	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12
Feb-11	\$22,053,172											
Mar-11	\$22,071,598	\$25,977,814										
Apr-11	\$22,025,002	\$24,928,895	\$22,540,488									
May-11	\$20,352,332	\$22,810,561	\$21,725,561	\$23,301,520								
Jun-11	\$20,497,262	\$22,864,798	\$22,117,359	\$22,368,832	\$28,512,005							
Jul-11	\$19,535,214	\$22,234,522	\$20,479,056	\$22,599,274	\$28,554,338	\$18,048,060						
Aug-11	\$19,535,214	\$22,241,215	\$20,473,882	\$22,579,411	\$28,549,625	\$18,040,127	\$19,852,991	\$22,466,075	\$19,782,023	\$17,483,516	\$20,749,204	\$14,057,938
Sep-11		\$22,241,215	\$18,609,937	\$18,886,026	\$23,305,187	\$21,944,475	\$21,404,897	\$26,051,371	\$20,209,828	\$19,036,624	\$23,213,123	\$15,275,412
Oct-11			\$18,609,937	\$16,819,535	\$23,363,093	\$21,834,525	\$22,132,431	\$26,235,504	\$20,214,125	\$19,524,486	\$23,211,418	\$15,273,113
Nov-11				\$16,819,515	\$21,468,073	\$20,165,613	\$20,854,493	\$23,996,126	\$18,363,919	\$23,365,775	\$23,158,116	\$15,362,380
Dec-11					\$21,468,073	\$20,163,699	\$20,852,350	\$23,976,371	\$18,350,942	\$23,356,668	\$23,135,919	\$15,362,551
Jan-12						\$20,163,699	\$20,839,005	\$23,958,408	\$18,326,233	\$23,331,163	\$23,104,038	\$15,337,046
					-	-						
Min	\$19,535,214	\$22,234,522	\$18,609,937	\$16,819,535	\$21,468,073	\$18,040,127	\$19,852,991	\$22,466,075	\$18,326,233	\$17,483,516	\$20,749,204	\$14,057,938
Max	\$22,071,598	\$25,977,814	\$22,540,488	\$23,301,520	\$28,554,338	\$21,944,475	\$22,132,431	\$26,235,504	\$20,214,125	\$23,365,775	\$23,213,123	\$15,362,551
% Change	13%	17%	21%	39%	33%	22%	11%	17%	10%	34%	12%	9%
		_						_				
			A	verage % Change	last 6 months	24%			Ave	erage % Change	next 6 months	16%
First	\$22,053,172	\$25,977,814	\$22,540,488	\$23,301,520	\$28,512,005	\$18,048,060	\$19,852,991	\$22,466,075	\$19,782,023	\$17,483,516	\$20,749,204	\$14,057,938
Last	\$19,535,214	\$22,241,215	\$18,609,937	\$16,819,535	\$21,468,073	\$20,163,699	\$20,839,005	\$23,958,408	\$18,326,233	\$23,331,163	\$23,104,038	\$15,337,046
% Change	-11%	-14%	-17%	-28%	-25%	12%	5%	7%	-7%	33%	11%	9%
		_						_				
			A	verage % Change	last 6 months	-14%			Ave	erage % Change	next 6 months	10%
Prior	\$19,535,214	\$22,241,215	\$18,609,937	\$16,819,535	\$21,468,073	\$20,163,699						
Current	\$19,535,214	\$22,241,215	\$18,609,937	\$16,819,515	\$21,468,073	\$20,163,699						
% Change				0%								
			A	verage % Change	e last 6 months	0%						



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Schedule Missing Logic (Activity Level)

	Activities Missing	Activities Missing	Missing Both Predecessor and		
Total Activity Count	Predecessor	Successor	Successor	Total Missing Logic	% Missing Logic
700	24	103	7	120	17.14%





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OUT BRIEF



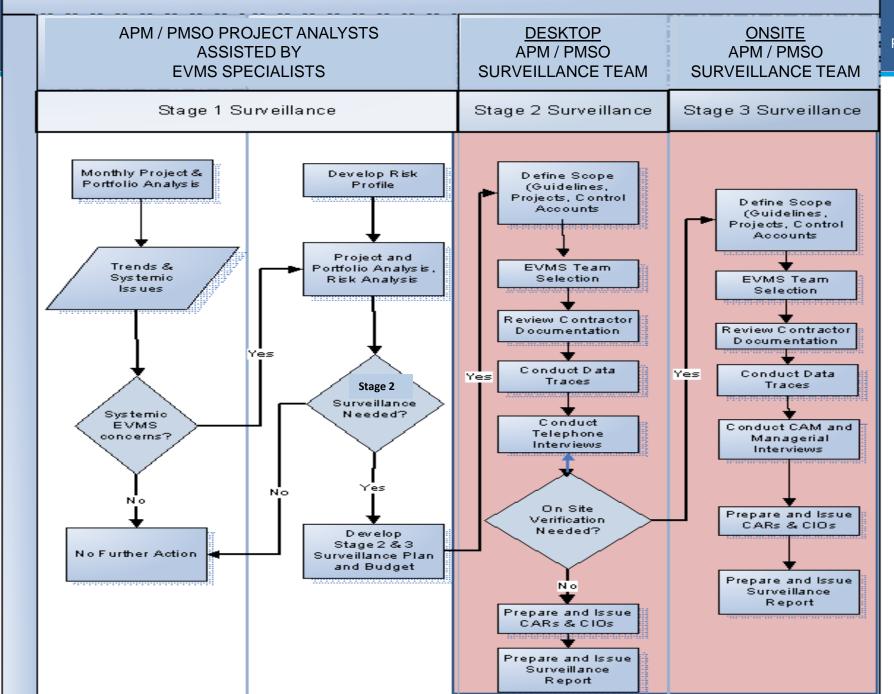
Surveillance: Applying the Risk Matrix Results to Determine Scope



Once all the risk matrices are complete for all projects for a particular contractor, then the risk matrix worksheet populates the data for each project, by Business and Management Process Area.

This type of tabulation assists in identifying where to focus surveillance by identifying which projects carry the risks in different areas.

Risks				
	PROJECT #			
	Project 1	Project 2	Project 3	SCHEDULE
Organizing	Н, Н	L, L	M, L	
Scheduling	М, Н, Н, Н, Н	L, M, H, M, M	L, L, L	
Work/Budget Authorization	Н, М, Н, Н, Н	Н, М, Н, Н, Н		
Accounting	М, Н, Н, Н, Н		~	
Indirect Management	н		7000	
Managerial Analysis	L, H, H, L, H, M, H			
Change Incorporation	М, Н, Н, Н, Н, Н			
Material Management	М, М, Н, Н, Н			
Subcontractor Management	М, Н			





- Develop prioritized surveillance schedule based on:
 - high and medium risk areas on high impact contractors/projects and DOE Order 413.3B requirements.
- Identify the contractor's EVMS processes to be reviewed, the selected projects, and the anticipated timeframe.
- Using a continuous, data-driven approach, the surveillance may be conducted over several months or during a single review.
- Most surveillance will be off-site desk top reviews of individual projects.

Stage 2 Surveillance – Desk Review



• Stage 2 of the surveillance process is focused on specific procedures, project documentation, and management processes.

• Input:

- One or more high risk areas identified during the Stage 1 surveillance.
- Typically these would be specific processes or procedures that do not appear to comply with ANSI/EIA-748
- Review additional EVMS documentation and artifacts

Objective:

- Validate the concerns from the Stage 1 surveillance
- When warranted issue CARs and CIOs



- Chaired by APM; includes Program/FPD and APM reps
- Defined based on the risk matrix and data analysis

Project selection:

- In order to determine if any systemic issues exist, the entire contractor portfolio of all projects requiring EVMS will be considered for EVMS surveillance
- Based on the risk profile, scope of the surveillance, including examination of multiple projects and control accounts within those projects is determined

Results:

- A determination of the guideline areas to be examined;
- The documentation and artifacts necessary for the surveillance;
- The team composition; and
- The timeline for the surveillance



- For contractors with multiple projects:
 - Review the risk ratings for each project
 - Determine which projects and control accounts should be reviewed
- The higher the risk, the more intense the surveillance.
 - Examples:
 - If Change Management is a high risk, review logs to determine which control accounts had replanning or rebaselining activity.
 - If Material Management is high risk, then select the control accounts that have the greatest amount of material.

Stage 2 Surveillance – Documentation and Artifacts Review



- Documentation static information (procedures)
- Artifacts dynamic outputs (data)
- Typical data requested:
 - At least three months of EVMS monthly reports
 - EVM variance analysis and correction action
 - Program schedules
 - Risk management plans
 - System Description Document and other pertinent procedures
 - WBS/OBS and WBS dictionary
 - EAC supporting documentation
 - Contract budget logs, e.g. CBB, MR, UB, PMB
 - Responsibility Assignment Matrix (RAM) (Dollarized)
 - Work authorization documentation

Stage 2 Surveillance – Data Traces



- Tracing the data flow between processes is a critical element of the review process for the review team.
 - Appendix C of the EVMS Surveillance Standard Operating Procedure provides information for conducting data traces
 - Disconnects between the EVMS processes indicates that the system is not functioning as intended and that the processes and procedures must be examined in detail.
 - This in-depth examination includes discussions with affected CAMs and/or project controls staff
 - Contractor discussions should be accomplished using audio, web-based, and/or video teleconferences to provide the insight necessary to determine if and what type of corrective action is necessary.



Some of the interview areas to consider are:

- Work authorization
- Organization
- EVM methodologies
- Cost and schedule integration
- Cost accumulation
- Scheduling and budgeting
- Material management
- Subcontract management and integration of data
- Risk assessment and mitigation
- Variance analysis
- Use of the information
- Change control and maintenance
- EAC process
- EVMS program training

- When conducting surveillance of a contractor's system, we must exercise due professional care.
- It isn't enough that the contractors give us the correct answers to our questions or we believe the accuracy of the output without examination and analysis.
- We need to require them to show, prove, demonstrate that they are using the system to manage their programs.
- We need to drill down, trace, analyze to make sure the data is accurate.
- We need to conduct a critical assessment of the tools, procedures and processes, and how they are used to manage the work.

TRUST BUT VERIFY



On-Site segment consisting of:

- Interviews with CAMs, management, and other project staff,
- Observation of demonstrations of tools and traces that could not be conducted remotely, and
- Physical verification of progress to assess reported work performed is accurately reflected.
- A focused review, specifically to assess concerns raised in Stages 1 and 2 that could not be completely evaluated via the desk top surveillance.

Breakdown of the EVMS Surveillance SOP



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Roles and Responsibilities

- APM Project Analyst
- APM EVM Specialist
- PMSO
- FPD
- Contracting Officer
- Contractor

Process

- Stage 1 Risk Assessment and Monthly Analysis
- Stage 2 Desktop Surveillance
- Stage 3 On-Site Surveillance

Documentation

- Corrective Action Requests and Continuous Improvement Opportunities
- Surveillance Results



Documenting Findings and Recommendations



Corrective Action Request (CAR):

A CAR is a systemic or limited occurrence of an ANSI/EIA 748 B non compliance or a significant impact to reporting, and requires a Corrective Action Plan (CAP).

Continuous Improvement Opportunity (CIO):

 A CIO is a recommended improvement or expansion of good practices for wider application and does not require a CAP.

Typical Fields

- Tracking record number
- Project name
- CAM/PM or other responsible individual
- Surveillance event type
- Date of review
- Date response is due
- Initiator or contact person
- Type of finding
- EVMS process affected
- EVMS Guideline intent violated (guideline number)
- Indicate if a repeat finding if so include previous finding tracking number
- System Description reference
- Description of finding

The contractor responds to each CAR via a CAP.

- At a minimum, a CAP should include:
 - Corrective action owner
 - Root cause of the finding of non-compliance
 - Corrective action plan and schedule
 - Preventive measures to ensure non-recurrence
 - Verifiable evidence of CAP completion

CAP is approved by the certifying authority.



CAP approval criteria:

- Thoroughness of root cause analysis
- Adequacy of corrective action to prevent recurrence
- Review for repeat non-compliances
- Verify guideline compliance
- Closure criteria, e.g. clear activities required to be successfully accomplished before the CAR can be closed out.
- The surveillance team documents the status of these activities and is responsible for ensuring that the statuses of activities are documented.

CAP / CAR verification and closure:

- Verification of completion of CAP activities may include any or all of the following:
 - Review evidence packages
 - Conduct additional CAM interviews
 - Data sampling

Documenting Surveillance Results



- The system surveillance report is issued to document the surveillance actions.
- Recommended content to capture essential information for record keeping and future referral includes:
 - Contractor Identification, Site Name, Project(s)
 - Major Critical Subcontractors
 - Surveillance Selection Risk Matrix(s);
 - Guidelines and Process(es) reviewed;
 - PM and CAM(s) interviewed and control accounts examined;
 - System deficiencies identified
 - CAR and Contractor CAP
 - Actions taken to correct the deficiency and prevent future occurrence
 - Analysis of trends and systemic issues
 - Best Practices Identified

- Surveillance report is issued after closure of all CARs.
- Certifying authority transmits the surveillance report via memorandum to the CO; copies internal stakeholders
- The CO will issue formal notification to the contractor
 - Successful resolution of EVMS surveillance;
 - Continued compliance with ANSI/EIA-748B

Surveillance Documentation via Metrics



- Examples of metrics that may be used to monitor surveillance effectiveness and EVMS health (source: NDIA's Surveillance Guide, Rev 1, 02/21/2011)
 - Number of findings by:
 - Guideline, Guideline Process Area, Project, Site
 - Findings by type, e.g., process, implementation, training
 - Repeat findings
 - Trends in open findings, e.g., increasing or decreasing
 - Closure cycle time

Surveillance Documentation via Metrics



A note about surveillance review metrics:

- Purpose of metrics is to allow management to understand surveillance results and determine the health of a process or system.
- Key to metric selection is to ensure that the data are readily available, accurate, meaningful, and focused on desirable corrective action.
- It is recommended that these metrics be briefed at Executive Management Levels as well as at EVM Functional Levels as feedback





EVM Common Issues





EVMS Description:

- Incomplete or inadequate
- Post-certification changes not communicated (FAR requirement)

Control Accounts:

- Mixing LOE with discrete effort within a work package
- Inappropriate use of Earned Value methods
- Too large to adequately manage
 - Typically 6 to 18 months for discrete; longer for LOE
 - Rule of thumb: what can be managed daily; consider character of work, breakout of labor, span of control

Work Packages/Discrete Tasks

- A good rule of thumb is work packages/discrete tasks durations should be no longer than 60 calendar days (44 working days) in length for near-term tasks (next six months or within the EVM rolling wave)
- Durations should reflect the 'most likely' estimate of the time required to accomplish the work



Estimate At Completion

- Comprehensive estimates not done at least annually
- Monthly EAC review/revision not accomplished

Baseline Change Control

- Current period/retroactive budget changes
- Budget transfers without scope and vice versa
- Misuse of Management Reserve
- Improper replanning (eliminating variances)

Subcontract management

- Prime responsible for the sub
- Inadequate flow down of system/reporting requirements
- Lack of surveillance
- Unreliable EACs

Common Compliance Issues - Schedules



 An expert schedule analyst should periodically review the schedule to ensure compliance to sound scheduling principles.

Critical Path Refresher

- A sequence of discrete tasks/activities in the network that has the longest total duration through the contract or project.
- The critical path and near-critical paths are calculated based on precedence relationships, lag times, durations, constraints, and status.
- Artificial constraints and incorrect, incomplete, or overly constrained logic shall be avoided because they <u>can skew the critical path</u> and near-critical paths.

Schedule Integration Issues

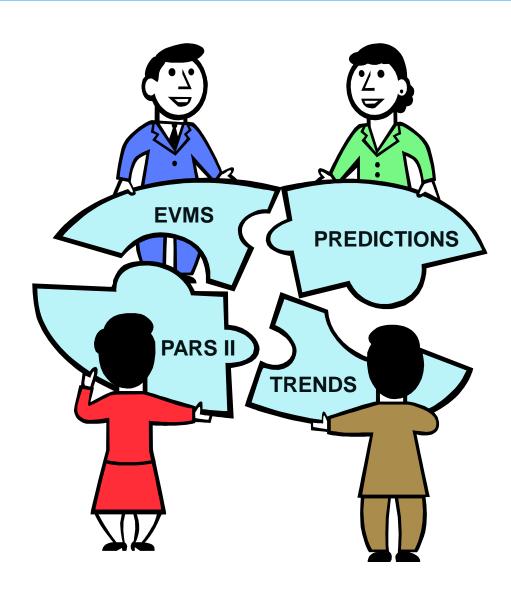
Lower level schedules do not roll up accurately to higher level schedules

Recommended Schedule Reference:

Planning and Scheduling Excellence Guide (PASEG)
 http://www.ndia.org/Divisions/Divisions/Procurement/Documents/PMSCommittee/CommitteeDocuments/PASEG/Planning and SchedulingExcellenceGuide PASEG v2.pdf

Questions / Comments Regarding Day 1





Agenda – Day 2



8:00 - 9:00 Budget vs. Funds

9:00 - 9:15 Break

9:15 - 11:00 EV Data Analysis

11:00 - 12:30 Lunch

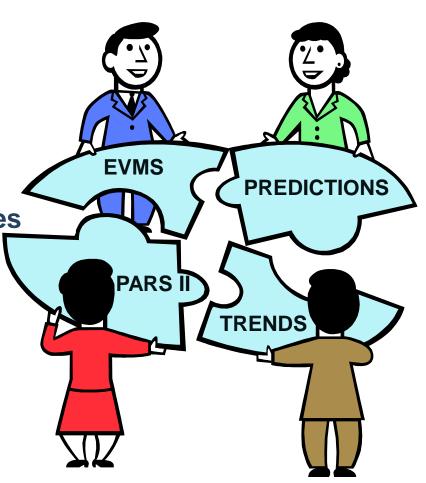
12:30 - 1:15 PARS II Assessment Roles

1:15 - 2:00 PARS II DepSec Monthly Report

2:00 - 2:15 Break

2:15 - 2:45 PARS II Reporting

2:45 - 4:00 PARS II Wrap-Up



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Budget vs Funds



Management Reserve & DOE Contingency



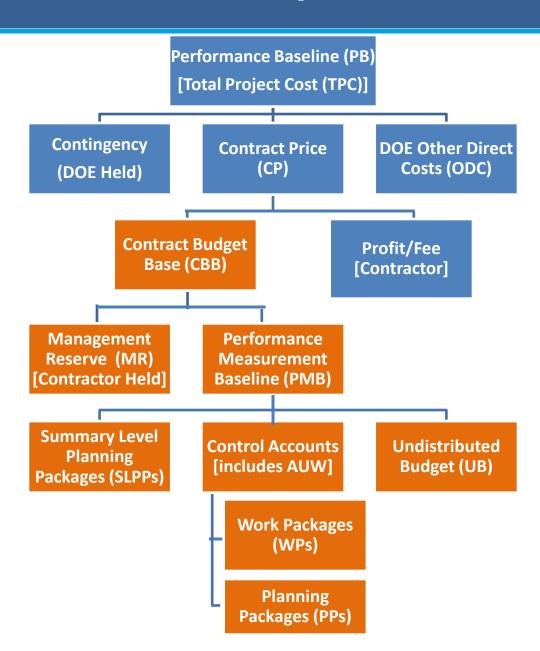
- Budget cannot be spent.
- It can only be used for measurement purposes.
- It is a metric.



 Funds are real dollars being spent and those real dollars forecasted to be spent.

Performance Baseline Components







- MR is Budget, not Funds so not a Financial Reserve
- Cannot be used to cover Budget overruns or to recover underruns
- Program cannot be successfully run without MR;
 Customer expects to see MR on Performance Reports
- Can be used to re-plan future work based on improved knowledge
- ANSI: "unexpected growth within the currently authorized work scope, rate changes, risk handling, and other program unknowns"
- Used for activities within the scope of the project (SOW) but outside the scope of any existing control account



Acceptable Uses (Debits)

- "Realized Risks" Identified in the Risk Register or unidentified risks; i.e. in-scope unplanned
 - Significant changes in execution strategy, e.g. make/buy (also credits)
 - SOW transfer, e.g., one control account to another (also credits)
 - Labor rate and/or overhead rate adjustments for work not yet completed (also credits) [or may be reflected in EAC]

Assure that MR is <u>not</u> used to

- Cover overruns [MR is not funds]
- Changing budget (crediting MR) for completed tasks that have underrun
- Source funding for added work scope



Contingency is applied as:

- -Funds obligated by government agencies to ensure adequate funds are available to complete all program/project work.
- Budget authorized by government agencies for scope changes, i.e. additions to the statement of work, authorized via contract modifications



Type A – Cost Growth:

- For additional, authorized, negotiated work
 - » Additional scope always requires contingency budget
 - » Additional scope 'may' require contingency funding, whether fully or partially or none (if underrunning)

Type B – Cost Overruns:

Funding to reimburse the contractor for project cost overruns

Contingency Type A Examples



Cost Growth/Increase [Clear] – Fully or partially funded

- Added Contractual SOW
 - Exercised Options
 - Engineering Change Proposal (ECP)
 - DOE Owned Realized Risks
 - Project Changes
- Renegotiated Schedule Customer Caused Impact

Cost Growth [Fuzzy]

- Re-accomplish (SOW unclear when begun)
- Requests for Equitable Adjustment (subject to approval)



- Funding limits cutting into the baseline
- Late spec approvals and drawings
- Government Furnished Equipment (GFE)/Government Furnished Material (GFM) late/inoperative
- Joint testing equipment/chambers/facilities not available
- Directed slips
- Additional SOW Internal replanning impact

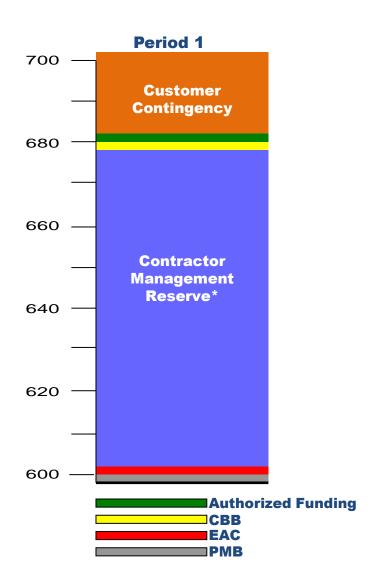


Cost Overruns

- The SOW did not change; it just costs more than planned
 - Underestimating management, administration, and support costs.
 - Not clearly understanding the cost of Data Item Requirements, Delivery Dates, Customer Reviews, and Oversight Support, etc.

Management Reserve and Contingency Usage Scenarios, pg 1 of 16





- It's important to have a clear understanding of the difference between contractor management reserve and government contingency.
- In planning the execution of a project the contractor identifies, schedules, and budgets those activities for the known scope.
- Let's walk through some scenarios.

^{*}Represents an MR forecast in the Most Likely EAC

Management Reserve and Contingency Usage Scenarios, pg 2 of 16

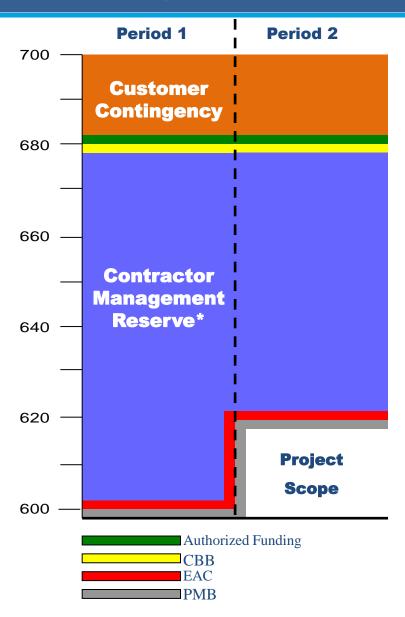


- The budget associated with known scope can have two components.
 - Distributed Budget is that already assigned and communicated (i.e. distributed) to responsible managers.
 - The second component is Undistributed Budget which is for known scope but has not been assigned to a responsible person to manage.
 - Together Distributed and Undistributed Budget comprise the Performance Measurement Baseline (PMB).
 - In addition to the PMB, a budget allowance is set aside to use for unforeseen or unanticipated inscope work that may appear in the course of project execution. This budget allowance is called Management Reserve (MR).
 - Together the PMB and MR comprise the Contract Budget Base or CBB. Other terms we will use in this presentation include EAC or Estimate At Completion and BAC or Budget At Completion.
 - After a rebaselining, EACs are equal to BACs, but it's easy to understand why they are not always the same value.
- In Period 1, we have an example of a project that has just been though a rebaselining.
- The PMB for the contractor is at \$600M, and there is MR available of \$80M that has a potential funding requirement.
- This gives a current funding coverage requirement to the DOE customer of \$680M.
- At this time, the DOE has an authorized funding level of \$700M, which allows for \$20M of funding Contingency.

Management Reserve and Contingency Usage Scenarios, pg 3 of 16







^{*}Represents an MR forecast in the Most Likely EAC

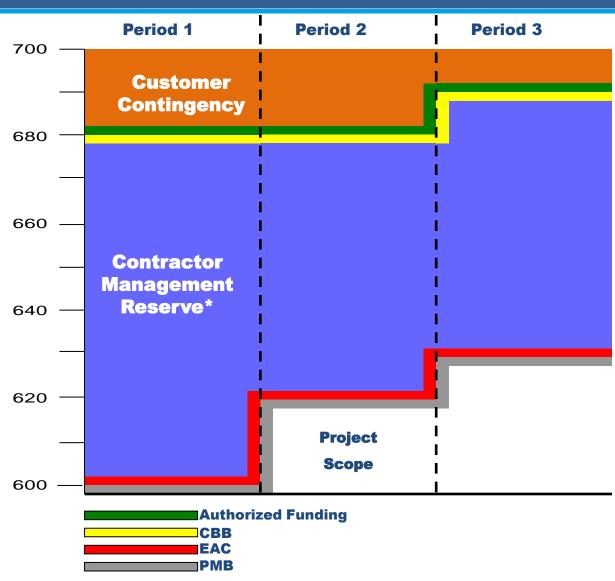
Management Reserve and Contingency Usage Scenarios, pg 4 of 16



- In Period 2, the contractor applied MR to the PMB due to the realization that additional unanticipated waste treatment testing would need to be done as part of their risk mitigation program.
- Because of this internal application of budget, the PMB (and therefore the BAC and EAC associated with this effort) increased accordingly, however there is no additional funding impact for the customer and the \$680M is still the contractor's Contract Budget Base.

Management Reserve and Contingency Usage Scenarios, pg 5 of 16





^{*}Represents an MR forecast in the Most Likely EAC

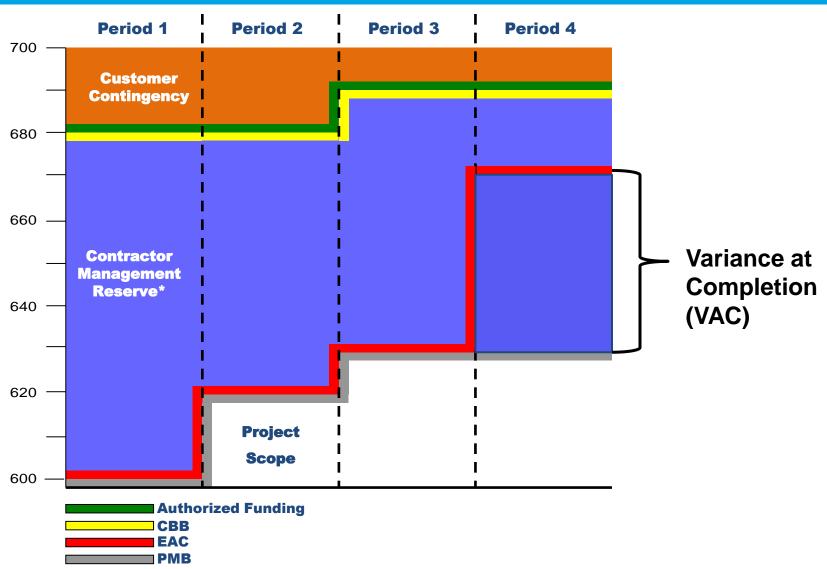
Management Reserve and Contingency Usage Scenarios, pg 6 of 16



- In Period 3, the DOE customer modifies the contract to add two additional holding tanks, a new scope of work estimated at \$10M.
- This out-of-scope change is an increase not only in the contractor PMB (and therefore the BAC & EAC for this effort), but also the CBB.
- This change decreases the available government Contingency and increases the total value of the contract.

Management Reserve and Contingency Usage Scenarios, pg 7 of 16





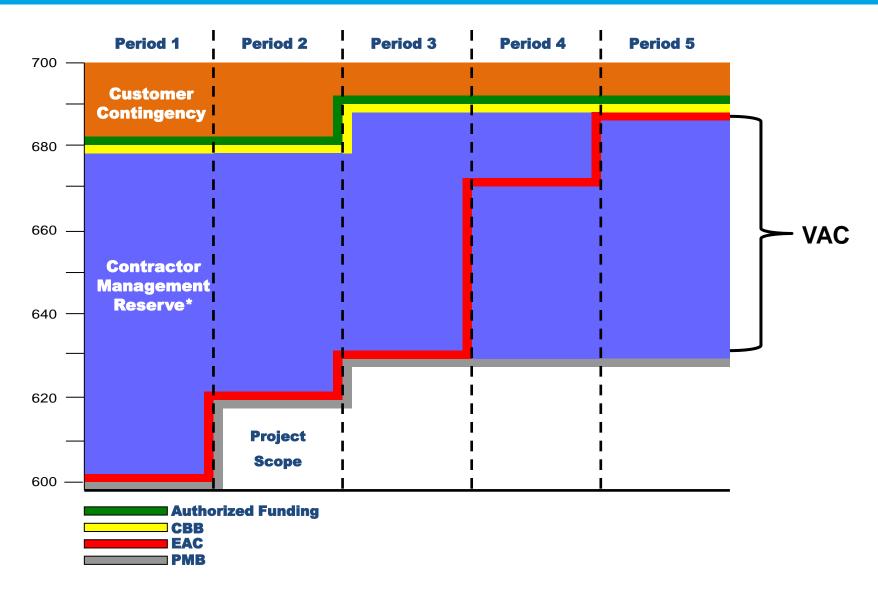
^{*}Represents an MR forecast in the Most Likely EAC



- In Period 4, a project wide bottoms-up EAC exercise has resulted in a \$40M forecasted overrun to the current PMB.
- Note that the PMB does not change. The EAC simply is the best estimate at the time of what the responsible managers think will be the ultimate cost of the work they have to do when it is finished.
- Because they are within the boundaries of the contract (CBB) there is no need for the DOE to dip into their remaining Contingency (yet). The bottom line is that the project now has a projection to overrun the PMB.
- If the contractor ends up not using all the Management Reserve, there
 may be enough left to balance this projected overrun. The graph shows
 what portion of the Management Reserve is excess above and beyond
 the EAC.

Management Reserve and Contingency Usage Scenarios, pg 9 of 16





^{*}Represents an MR forecast in the Most Likely EAC

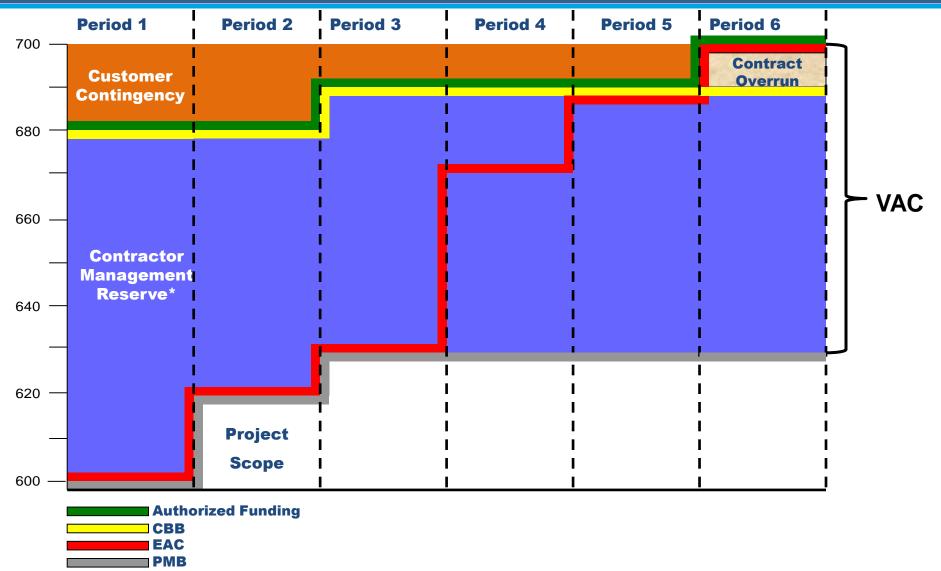
Management Reserve and Contingency Usage Scenarios, pg 10 of 16



- In Period 5, the weld process for the stainless steel containers is proving more difficult than originally planned. Two tanks have to be scrapped and the process re-invented.
- This causes an estimated \$20M increase in costs.
- The overrun has eliminated any possibility that there might be enough unused MR budget to offset any additional overruns.
- DOE is still holding \$10M of Contingency, and has not yet increased the authorized funding limits on the contract.
- Should the contractor need to apply MR, it would result in an immediate increase to not only the PMB but to the EAC if the need for the use of MR was not considered in the ETC development.
- Remember MR can be used for future work within scope of contract but outside scope of an existing control account.

Management Reserve and Contingency Usage Scenarios, pg 11 of 16





^{*}Represents an MR forecast in the Most Likely EAC

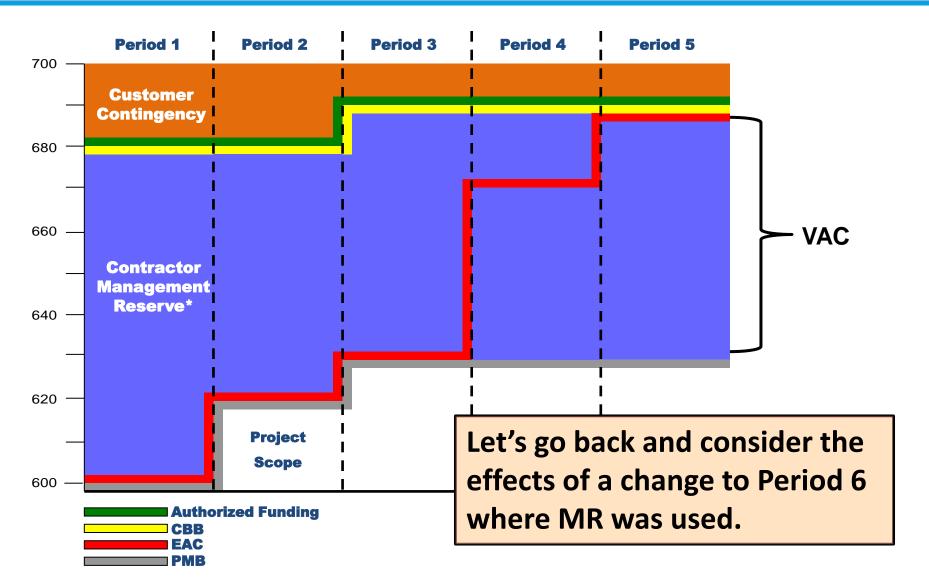
Management Reserve and Contingency Usage Scenarios, pg 12 of 16



- Period 6 Scenario 1: Unfortunately, the impact from the welding issues is \$10M more than originally projected as the contractor struggles to perfect the process.
- This doesn't change the contract value (CBB) since it's only a funding
 increase, but it does require the customer to change the funding
 authorization to match the increase in EAC.
- The Contingency is gone as is any flexibility for the DOE customer to make additional program adjustments.

Management Reserve and Contingency Usage Scenarios, pg 13 of 16





^{*}Represents an MR forecast in the Most Likely EAC

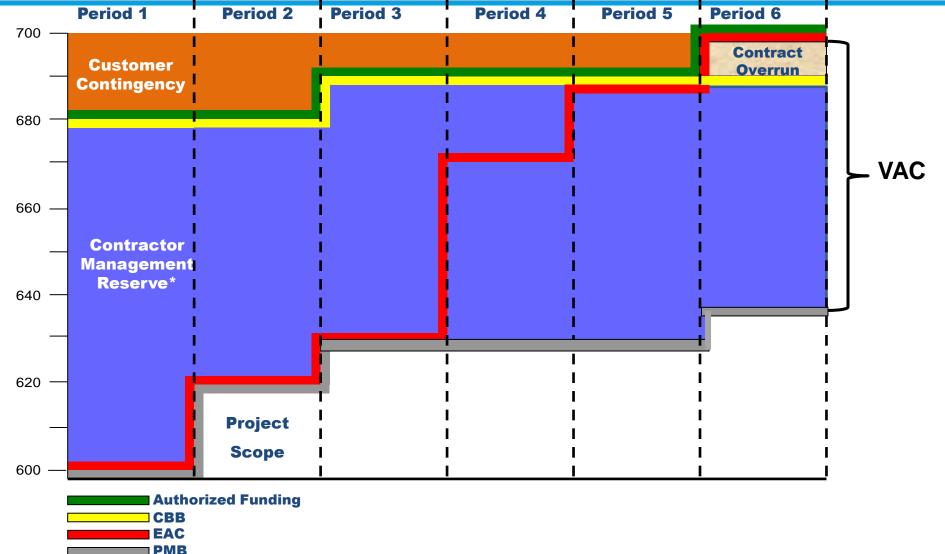
Management Reserve and Contingency Usage Scenarios, pg 14 of 16



- Now let's go back to Period 5. Remember, the weld process for the stainless steel containers is proving more difficult than originally planned. Two tanks have to be scrapped and the process re-invented. This causes an estimated \$20M increase in costs.
- This unanticipated impact depletes the remaining Management Reserve.
 The overrun has eliminated any possibility that there might be enough unused MR budget to offset any additional overruns.
- The DOE Customer is still holding \$10M of Contingency, and has not yet increased the authorized funding limits on the contract.
 - Should the contractor need to apply MR, it would result in an immediate increase to not only the PMB but to the EAC if the need for the use of MR was not considered in the ETC development.
- What happens when more MR is used in period 6. How does that affect Authorized Funding?

Management Reserve and Contingency Usage Scenarios, pg 15 of 16





^{*}Represents an MR forecast in the Most Likely EAC

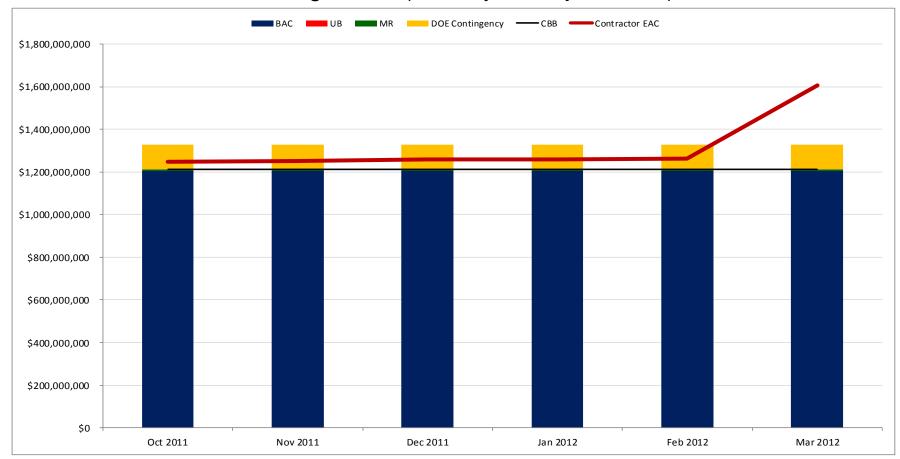
Management Reserve and Contingency Usage Scenarios, pg 16 of 16



- Period 6 scenario 2: The contractor applied \$10M MR to the PMB due to the realization that additional unanticipated ground water testing would need to be done as part of their risk mitigation program. Because of this internal application of budget, the PMB (and therefore the BAC and EAC associated with this effort) increased accordingly.
- This time when MR increased there is a need for contingency funds because the EAC associated with the new scope pushes above the authorized funding. Again, this doesn't change the contract value (CBB) since it's only a funding increase, but it does require the customer to change the funding authorization to match the increase in EAC. The Contingency is gone as is any flexibility for DOE to make additional program adjustments.
- Note the \$10M above the CBB is labeled here as "contract overrun" since it exceeds the CBB. The VAC estimated at \$60M less the \$10M contract overrun is considered estimated "PMB overrun".
- What this means to DOE is *that if the contractor uses any MR in the future,* an increase to the authorized funding would be likely so DOE needs to take action now to increase their TPC to replenish the contingency based on the current projections.

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Funding Status (Monthly at Project Level)



	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012
DOE Cost Contingency	\$114,360,097	\$114,360,097	\$114,360,097	\$114,360,097	\$114,360,097	\$114,360,097
Management Reserve (MR)	\$8,220,611	\$8,220,611	\$8,220,611	\$8,220,611	\$8,220,611	\$8,220,611
Undistributed Budget (UB)	\$0	\$0	\$0	\$0	\$0	\$0
Budget At Complete (BAC)	\$1,203,931,397	\$1,203,931,397	\$1,203,931,397	\$1,203,931,397	\$1,203,931,397	\$1,203,931,397
Contract Budget Base (CBB)	\$1,212,152,008	\$1,212,152,008	\$1,212,152,008	\$1,212,152,008	\$1,212,152,008	\$1,212,152,008
Estimate At Complete (EAC)	\$1,246,412,143	\$1,251,302,179	\$1,260,800,606	\$1,260,800,161	\$1,261,647,039	\$1,605,143,206

- Purpose: Demonstrate if sufficient funding is available to complete the project.
- Major components of TPC are plotted in a stack column:
 - identify current balances of each major TPC component mainly DOE Contingency and CBB.

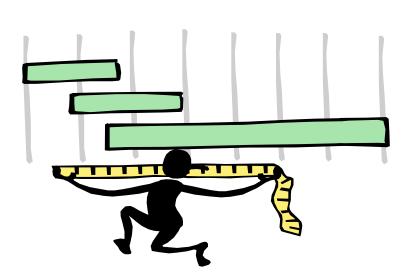
Analysis:

- Compare contractor-reported forecast (EAC) against TPC to determine if additional funding may be required to complete the project.
- Verify that all components of TPC are being accurately reported and the height of each column for each period is the same or very close.
- Indicators that the risk reserves and contractor baseline have not been reported accurately or are being used improperly.
 - Fluctuations in the CBB line without corresponding reverse changes in DOE Contingency
 - A significant change in Contingency balance that is not reflected in CBB line
 - A decrease in Contingency and an associated increase in MR without any change to BAC



EV Data Analysis





• FAR 52.234-4(f)

The Contractor shall provide access to all pertinent records and data requested by the Contracting Officer or a duly authorized representative as necessary to permit Government surveillance to ensure that the EVMS conforms, and continues to conform, with the performance criteria referenced in paragraph (a) of this clause.

DOE O 413.3B, Attachment 1, Contractor Requirements Document

- 2.a. For a cost reimbursement contract, the required project performance data shall include:
 - ANSI/EIA-748B earned value;
 - Earned value time-phased incremental cost and quantity;
 - Management reserve;
 - Schedule;
 - Variance analysis; and
 - Risk management data.

- 1. Validity check of data
- 2. Analyze variances



- 3. Analyze trends
- 4. Assess realism of contractor's EAC
- 5. Predict future performance and an IEAC

- First and foremost, to use the EV data to manage the project and make informed decisions and projections, we first must be able to rely on data accuracy and reliability
- EV data receives high visibility
 - o Briefed at DepSec level for PARS II reportable capital asset projects
 - o Critical that EVMS data reported to stakeholders is accurate
- Trends and indices mean nothing if the data is incorrect
- Responsibility
 - Contractor primary
 - FPD and IPT 'boots on the ground' verification
 - HQ 'trust but verify'
- Primary purpose of a surveillance program



Review several of the EV warning triggers

- -PARS II
 - Automatically issues warnings upon upload
 - Check the new PARS II Analysis Reports Folder for the EV Data Validity (WBS Level) report for areas to investigate
 - Analysts can create further sorts and filters
 - Again, PARS II is designed for FPD, Program Office, and HQ everyone viewing the same data, the same way

And always important –

- Physical verification by technical team's knowledge of project status
 - Does the data reflect reality?

PARS II EV Data Validity (WBS Level) Report



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EV Data Validity (WBS Level)



							IIOW	<= ±	20%													
								ed	> ±	20%												
Incremental BCWP	Incremental ACWP	Cemels/ BC'	alatire 'YP	Cemulative ACWP	Cem CV	Cum SV	Cum CPi	Cum SPi	BAC	EAC	VAC	≵ Compl		Hegati ve SPA		BCWP > BAC	ACWP		CPi (> TCPi	EAC without BAC	Missin q ETC	Extra ETC
15,793	9,743	3,071	06,009	43,347	62,662	42,938	2.45	1.68	650,826	598,941	51,885	16.3%	0.98						1.46			
13,726	35	1, 5,100	285,110	193,392	91,718	(870,990)	1.47	0.25	1,265,640	1,265,640		22.5%	0.91						0.56			
		13,087	13,038	13,686	(648)	(49)	0.95	1.00	576,566	577,397	(831)	2.3%	1.00									
		13,087	13,038	13,686	(648)	(49)	0.95	1.00	576,566	577,397	(831)	2.3%	1.00									
916,580	2,409,989	27,913,531	17,500,985	25,725,021	(8,224,036)	(10,412,546)	0.68	0.63	45,757,030	51,338,078	(5,581,048)	38.2%	1.10				Х	Х	-0.42			
15,904	77,924	1,705,759	1,520,471	1,503,325	17,146	(185,288)	1.01	0.89	1,774,836	1,774,836		85.7%	0.94						0.07			
898,017	2,302,774	25,045,906	15,483,662	23,545,007	(8,061,345)	(9,562,244)	0.66	0.62	39,789,451	45,161,553	(5,372,102)	38.9%	1.12				Х	Х	-0.47			
2,659	29,292	1,161,866	496,852	676,690	(179,838)	(665,014)	0.73	0.43	4,192,742	4,401,689	(208,947)	11.9%	0.99						-0.26			
84,169	109,154	6,169,140	1,803,302	1,644,320	158,982	(4,365,838)	1.10	0.28	11,880,202	12,019,599	(139,397)	15.2%	0.97						0.13			
55,553	77,742	3,878,066	1,076,327	809,815	266,512	(2,801,739)	1.33	0.28	5,293,824	5,296,010	(2,186)	20.3%	0.94						0.39			
28,616	31,412	2,291,075	726,975	834,505	(107,530)	(1,564,100)	0.87	0.32	6,586,378	6,723,589	(137,211)	11.0%	0.99						-0.12			
4,103,754	7,113,575	70,519,502	61,657,177	68,877,252	(7,220,075)	(8,862,325)	0.90	0.87	108,644,667	119,289,137	(10,644,470)	56.8%	0.93									
17,698	8,177	5,446,717	4,594,683	4,543,119	51,564	(852,034)	1.01	0.84	10,072,341	12,415,920	(2,343,579)	45.6%	0.70						0.32			
849	(1,905)	3,125,675	3,174,949	3,036,184	138,765	49,274	1.05	1.02	5,293,336	5,138,403	154,933	60.0%	1.01	Inc ACWP								
(14)	5,759	676,768	581,627	591,180	(9,553)	(95,141)	0.98	0.86	686,912	912,134	(225,222)	84.7%	0.33	Inc BCWP					0.66			
(482,738)	1,815,562	44,910,402	35,781,469	43,287,183	(7,505,714)	(9,128,933)	0.83	0.80	45,655,349	54,945,426	(9,290,077)	78.4%	0.85	Inc BCWP								
4,564,944	5,313,322	14,997,346	15,808,265	15,714,691	93,574	810,919	1.01	1.05	30,807,704	30,625,294	182,410	51.3%	1.01									
3,015	(27,339)	1,362,593	1,716,184	1,704,896	11,288	353,591	1.01	1.26	8,274,196	7,397,130	877,066	20.7%	1.15	Inc ACV	N	-				6.41		
									1000.000	3000000			400		Note	e: This	s is a	partia	al vie	w of the	Repo	rt 🗍

CPi/SPi Thresholds

10%

No Fill

- Negative BCWS, BCWP, or ACWP entries in incremental period
 - Indicates a retroactive change that needs to be explained and verified
 - Investigate changes in % complete
- Incremental BCWS, BCWP, or ACWP greater than cumulative (error)
- BCWP > BAC (error)
- ACWP_{cum} > EAC (error)
- CV < VAC (more negative, e.g. CV = -\$280k; VAC = -\$30k)
 - Indicates EAC does not reflect the overrun to date
- TCPI_{EAC} differs from CPI by more than 5%
 - EAC reasonableness indicator which warrants investigation if delta greater than .05

EAC with no BAC (indicates an unbudgeted activity)

- Missing ETC indicates BCWP < BAC yet there is no future ETC planned as ACWP ≥ EAC
 - Baselined work incomplete yet no work in future planned ETC

- Extra ETC indicates all work is accomplished because BCWP = BAC, yet ACWP < EAC
 - All baselined work completed yet future planned work in ETC

PARS II Retroactive Change Indicator (6-mos; PMB Level) Report



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Contractor erformance iod End Date	Cum BCWS	7/22/2 Cum BCWP	012 Cum ACWP	Cum ACWP + ETC	Cum BCWS	6/24/2 Cum BCWP		m ACWP + ETC	Cum BCWS	5/20/2 Cum BCWP	012 Cum ACWP	Cum ACWP + ETC	Cum BCWS	4/22/2		Cum ACWP + ETC	Cum BCWS	3/25/: Cum BCWP	2012 Cum ACWP	2/1 Cum ACWP + ETC	19/2012 Cum BCWS	Cum BCWP	Cum ACWP	Cum AC
03/30/2009	\$3,393,475	\$49,078,038	\$48,643,888		\$3,393,475	\$49,078,038	\$48,643,888		\$3,393,475	\$49,078,038	\$48,643,888		\$3,393,475	\$49,078,038	\$48,643,888		\$53,416,001	\$49,078,038	\$48,643,888		\$53,416,001	\$49,078,038	\$48,643,888	8
4/26/2009 5/24/2009	\$3,851,567 \$4,386,018	\$49,078,038 \$49,078,038	\$49,631,688 \$50,237,764		\$3,851,567 \$4,386,018	\$49,078,038 \$49,078,038	\$49,631,688 \$50,237,764		\$3,851,567 \$4,386,018	\$49,078,038 \$49,078,038	\$49,631,688 \$50,237,764		\$3,851,567 \$4,386.018	\$49,078,038 \$49,078,038	\$49,631,688 \$50,237,764		\$54,078,764 \$54,795,440	\$49,078,038 \$49,078,038	\$49,631,688 \$50,237,764		\$54,078,764 \$54,795,440	\$49,078,038 \$49,078,038	\$49,631,688 \$50,237,764	1
5/24/2009	\$4,386,018	\$49,078,038	\$50,237,764		\$4,386,018	\$49,078,038	\$50,237,764		\$4,386,018	\$49,078,038	\$50,237,764		\$4,386,018	\$49,078,038	\$50,237,764		\$54,795,440	\$49,078,038	\$50,237,764		\$54,795,440	\$49,078,038	\$50,237,764	
	Contrac	ctor					4/22	2/2012				3/25/2012										I		
	Performa eriod End		Cur	n BCW	s	Cum E	BCWP	Cı	ım ACV	VP	Cum A	CWP + I	ETC	Cum B	cws	C	um BCV	VP	Cum	ACWP	Cun	n ACWP	+ ETC	3
	03/30/20	009		\$3,393	3,475	\$4	<u>a n78 n3</u>	8	\$48.6	13 888				\$53	3,416,00)1	\$49,07	78,038	\$	48,643,8	888			
	04/26/20	009		\$3,851	,567			T						\$54	1,078,76	64	\$49,07	78,038	\$	49,631,6	388			
	05/24/20	009		\$4,386	5,018	\$49	9,078,03	8	\$50,2	37,764				\$54	1,795,44	10	\$49,07	78,038	\$	50,237,7	'64			
	06/21/20	009		\$4,834	1,514	\$5	5,554,89	1	\$51,9	45,311				\$55	5,317,17	79	\$55,55	54,891	\$	51,945,3	311			
	07/26/20	009		\$5,337	7,752	\$5	5,853,13	6	\$54,5	12,317				\$55	5,843,13	38	\$55,85	53,136	\$	54,512,3	317			
2/20/2011	\$85,045,102	\$110,125,202	\$113,309,882		\$85,045,102	\$110,125,202	\$113,309,882		\$85,045,102	\$110,125,202	\$113,309,882		\$85,045,102	\$110,125,202	\$113,309,882		\$124.015.863	\$110.125.202	\$113,309,882		\$124.015.863	\$110.125.202	\$113,309,882	
/20/2011	\$85,102,893	\$113,224,489	\$117,078,531		\$85,102,893	\$113,224,489	\$117,078,531		\$85,102,893	\$113,224,489	\$117,078,531		\$85,102,893	\$113,224,489	\$117,078,531		\$127,608,616	\$113,224,489	\$117,078,531		\$127,608,652	\$113,224,489	\$117,078,531	
1/24/2011	\$89,192,583	\$117,082,106	\$121,807,708		\$89,192,583	\$117,082,106	\$121,807,706		\$89,192,583	\$117,082,106	\$121,807,706		\$89,192,583	\$117,082,106	\$121,807,706		\$132,315,958	\$117,082,106	\$121,807,706		\$132,315,994	\$117,082,106	\$121,807,706	6
22/2011	\$89,751,462	\$119,933,951	\$124,815,171		\$89,751,462	\$119,933,951	\$124,815,171		\$89,751,462	\$119,933,951	\$124,815,171		\$89,751,462	\$119,933,951	\$124,815,171		\$137,119,802	\$119,933,951	\$124,815,171		\$137,119,838	\$119,933,951	\$124,815,171	1
7/24/2011	\$91,729,208 \$92,984,525	\$124,837,175 \$128,227,147	\$128,625,389 \$134,232,287		\$91,729,208 \$92,984,525	\$124,837,175 \$128,227,147	\$128,625,389 \$134,232,287		\$91,729,208 \$92,984,525	\$124,837,175 \$128,227,147	\$128,625,389 \$134,232,287		\$91,729,208 \$92,984,525	\$124,837,175 \$128,227,147	\$128,625,389 \$134,232,287		\$136,423,460 \$141,090,843	\$124,837,175 \$128,227,147	\$128,625,389 \$134,232,287		\$136,423,496 \$141,090,879	\$124,837,175 \$128,227,147	\$128,625,389 \$134,232,287	9
8/21/2011	\$96,137,953	\$133,520,891	\$139,955,229		\$96,137,953	\$133,520,891	\$139,955,229		\$96,137,953	\$133,520,891	\$139,955,229		\$96,137,953	\$133,520,891	\$139,955,229		\$147,117,331	\$133,520,891	\$139,955,229		\$147,117,367	\$133,520,891	\$139,955,229	
9/25/2011	\$99,103,645	\$138,525,557	\$147,159,656		\$99,103,645	\$138,525,557	\$147,159,656		\$99,103,645	\$138,525,557	\$147,159,656		\$99,103,645	\$138,525,557	\$147,159,656		\$153,636,648	\$138,525,557	\$147,159,656		\$153,636,684	\$138,525,557	\$147,159,658	6
0/23/2011	\$102,072,702	\$140,612,042	\$149,627,467		\$102,072,702	\$140,612,042	\$149,627,467		\$102,072,702	\$140,612,042	\$149,627,467		\$102,072,702	\$140,612,042	\$149,627,467		\$157,950,925	\$140,612,042	\$149,627,467		\$157,950,961	\$140,612,042	\$149,627,467	3
1/20/2011	\$104,902,876	\$144,520,176	\$154,618,299		\$104,902,876	\$144,520,176	\$154,618,299		\$104,902,876	\$144,520,176	\$154,618,299		\$104,902,876	\$144,520,176	\$154,618,299		\$161,023,562	\$144,520,176	\$154,618,299		\$161,023,598	\$144,520,176	\$154,618,299	9
2/18/2011	\$104,450,516	\$147,081,848	\$158,883,364		\$104,450,516	\$147,081,848	\$158,883,364		\$104,450,516	\$147,081,848	\$158,883,364		\$104,450,516	\$147,081,848	\$158,883,364		\$163,980,731	\$147,081,848	\$158,883,364		\$163,980,767	\$147,081,848	\$158,883,364	4
1/22/2012	\$107,506,639	\$149,773,255	\$162,791,308		\$107,506,639	\$149,773,255	\$162,791,308		\$107,506,639	\$149,773,255	\$162,791,308		\$107,506,639	\$149,773,255	\$162,791,308		\$167,282,072	\$149,773,255	\$162,791,308		\$167,282,108	\$149,773,255	\$162,791,308	
2/19/2012	\$110,449,075	\$153,045,649	\$166,740,727		\$110,449,075	\$153,045,649	\$166,740,727		\$110,449,075	\$153,045,649	\$166,740,727		\$110,449,075	\$153,045,649	\$166,740,727		\$174,309,699	\$153,045,649	\$166,740,727		\$174,309,735	\$153,045,649	\$166,740,727	7 \$16
3/25/2012	\$114,901,384	\$156,077,371	\$170,617,916		\$114,901,384	\$156,077,371	\$170,617,916		\$114,901,384	\$156,077,371	\$170,617,916		\$114,901,384	\$156,077,371	\$170,617,916		\$180,445,451	\$156,077,371	\$170,617,916	\$170,617,916	\$179,664,176	\$153,045,649	\$166,740,727	7 \$17
14/22/2012	\$156,746,766	\$160,556,250	\$175,673,723		\$156,746,766	\$160,556,250	\$175,673,723		\$156,746,766	\$160,556,250	\$175,673,723		\$156,746,766	\$160,556,560	\$175,673,723	\$175,673,723	\$183,477,257	\$156,077,371	\$170,617,916	\$182,518,564	\$182,316,863	\$153,045,649	\$166,740,727	7 \$18
	\$159,127,232	\$164,376,288	\$179,229,781		\$159,127,232	\$164,376,288	\$179,229,781	186.881.165	\$159,127,232	\$164,376,288	\$179,229,781	\$179,229,781	\$159,127,022	\$160,556,560	\$175,673,723	\$188,121,994	\$186,854,906	\$156,077,371	\$170,617,916	\$189,569,264	\$185,366,024	\$153,045,649	\$166,740,727 \$166,740,727	7 \$19 7 \$19
05/20/2012									\$164,544,416	\$164,376,288	\$179,229,781	\$196,256,031	\$164,522,844	\$160,556,560	\$175,673,723	\$194,050,836	\$187,534,613	\$156,077,371	\$170,617,916	\$196,786,081	\$186,056,514	\$153,045,649		
05/20/2012 06/24/2012 7/22/2012	\$164,557,898 \$170,424,291	\$171,713,858 \$176,209,468	\$186,881,165 \$193,249,917	\$193,249,917	\$164,557,896 \$170,424,291	\$171,838,355		\$196,693,417	\$170,129,709	\$104,070,200	\$175,EE5,761	\$202,532,227	\$170,049,599	***************************************		\$198,067,813	\$187,572,997			\$199,349,268	\$186,103,757	9100,040,040	\$100,740,727	\$19

Enlarged portion indicates changes were made to historical time phasing of BCWS. Questions to ask:

- 1. Why was budget removed? Was scoped removed?
- 2. Does rationale meet Guideline 30, e.g. correction of errors, routine accounting adjustments, effects of customer or management directed changes, or to improve the baseline integrity and accuracy of performance measurement data?
- 3. Why was the chang made to history rather than in current period?

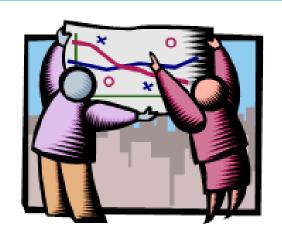


Identify multiple elements with similar validity issues

- Overall validity problems, e.g., same error occurring within same IPT or function, or across multiple control accounts or project(s)
- This is key when identifying systemic issues with an Earned Value Management System as opposed to a single occurrence



- 1. Validity check of data
- 2. Analyze variances

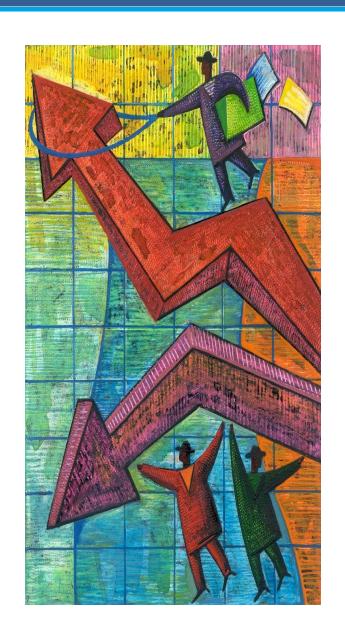


- 3. Analyze trends
- 4. Assess realism of contractor's EAC
- 5. Predict future performance and an IEAC

Analyze Variances



- Identify and investigate variances
- Review cumulative variances, sorting by size
- Also review current period variances to help spot growing concerns
- The PARS II Performance Analysis (WBS Level) Report is helpful as seen on the next slide.





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		Cumulative				At Complete	
BCWS	BCWP	ACWP	SV	CV	BAC	EAC	VAC
\$883,197,788.38	\$853,128,800.22	\$863,982,970.58	(\$30,068,988.16)	(\$10,854,170.36)	\$1,203,931,397.09	\$1,260,800,606.00	(\$56,869,208.91)
\$248,912,596.50	\$248,756,313.88	\$249,543,569.77	(\$156,282.62)	(\$787,255.89)	\$249,086,697.30	\$249,965,883.17	(\$879,185.87)
\$14,132,836.70	\$14,132,836.70	\$14,115,047.18		\$17,789.52	\$14,132,836.70	\$14,115,047.18	\$17,789.52
\$18,916,512.00	\$18,916,512.00	\$18,914,884.03		\$1,627.97	\$18,916,512.00	\$18,914,884.03	\$1,627.97
\$14,517,200.00	\$14,517,200.00	\$14,514,564.96		\$2,635.04	\$14,517,200.00	\$14,514,564.96	\$2,635.04
\$31,305,140.97	\$31,305,140.97	\$31,300,141.27		\$4,999.70	\$31,305,140.97	\$31,300,141.27	\$4,999.70
\$130,652,121.92	\$130,652,121.92	\$131,455,924.79		(\$803,802.87)	\$130,652,121.92	\$131,455,924.79	(\$803,802.87)
\$12,569,864.47	\$12,569,864.47	\$12,294,354.50		\$275,509.97	\$12,569,864.47	\$12,294,354.50	\$275,509.97
\$25,841,965.92	\$25,841,965.92	\$25,818,452.39		\$23,513.53	\$25,841,965.92	\$25,818,452.39	\$23,513.53
\$976,954.52	\$820,671.90	\$1,130,200.65	(\$156,282.62)	(\$309,528.75)	\$1,151,055.32	\$1,552,514.05	(\$401,458.73)
\$573,625,433.14	\$544,567,614.56	\$562,024,024.39	(\$29,057,818.58)	(\$17,456,409.83)	\$782,950,431.96	\$842,501,545.01	(\$59,551,113.05)
\$136,638,824.63	\$136,638,824.63	\$139,684,638.88		(\$3,045,814.25)	\$136,638,824.63	\$139,684,638.88	(\$3,045,814.25)
\$145,662,416.37	\$145,662,416.37	\$147,685,407.68		(\$2,022,991.31)	\$145,662,416.37	\$147,685,407.68	(\$2,022,991.31)
\$66,627,190.29	\$66,627,190.29	\$65,355,185.40		\$1,272,004.89	\$66,627,190.29	\$65,355,185.40	\$1,272,004.89
\$55,546,709.38	\$56,916,991.33	\$56,537,478.52	\$1,370,281.95	\$379,512.81	\$112,090,647.60	\$122,360,148.60	(\$10,269,501.00)
\$104,510,344.64	\$81,168,768.98	\$90,997,637.47	(\$23,341,575.66)	(\$9,828,868.49)	\$213,286,686.07	\$248,116,582.82	(\$34,829,896.75)
-		· /\\\DC	11 5		1		1/40

Performance Analysis (WBS Level) Report; view Report tab; sort on SV, CV, or VAC

\$9,243,732.12	\$9,243,732.12	\$9,323,882.85		(\$80,150.73)	\$9,243,732.12	\$9,323,882.85	(\$80,150.73)
\$11,373,700.15	\$10,518,813.19	\$9,321,556.57	(\$854,886.96)	\$1,197,256.62	\$116,964,331.71	\$113,323,090.97	\$3,641,240.74
\$24,584,422.65	\$24,584,422.65	\$23,988,835.00		\$595,587.65	\$28,354,417.00	\$28,354,417.00	
\$15,457,903.82	\$15,457,903.82	\$9,781,102.00		\$5,676,801.82	\$17,331,787.00	\$17,331,787.00	
\$883,197,788.38	\$853,128,800.22	\$863,982,970.58	(\$30,068,988.16)	(\$10,854,170.36)	\$1,203,931,397.09	\$1,260,800,606.00	(\$56,869,208.91)



Analyze variances

- -Determine the cause
- Determine if recurring or non-recurring (price of one-time purchase)
- Isolate the non-recurring data when performing trend analysis
- -Target problem areas

In Search of the Root Cause



Schedule Variance

Cost Variance

Unfavorable

- Lack of resources due to...
- Late vendor deliveries because...
- Rework required due to...
- Work more complex than expected because...
- Unclear requirements in the areas of...

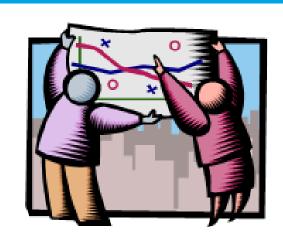
- Work is more complex than anticipated because...
- Extensive Design Review comments have resulted in...
- Material price escalation due to...
- The estimate was understated because....

avorable

- Increased efficiency due to...
- Work less complex than anticipated in the areas of...
- Fewer revisions and rework because...
- Subcontractor ahead of schedule because...

- Efficiencies being realized because...
- We used less expensive resources to accomplish the work and...
- We negotiated a lower price with the supplier due to...
- The new CAD system reduced the time required..

- 1. Validity check of data
- 2. Analyze variances



- 3. Analyze trends
- 4. Assess realism of contractor's EAC
- 5. Predict future performance and an IEAC

- What do the contractor's performance trends indicate over time?
- Is the current level of contractor performance projected to continue and why?
- What performance changes are expected and what are the drivers?
- Are MR and Contingency burn rates and use acceptable?
 - Mask/hide cost overruns?



How Can We Use the Data

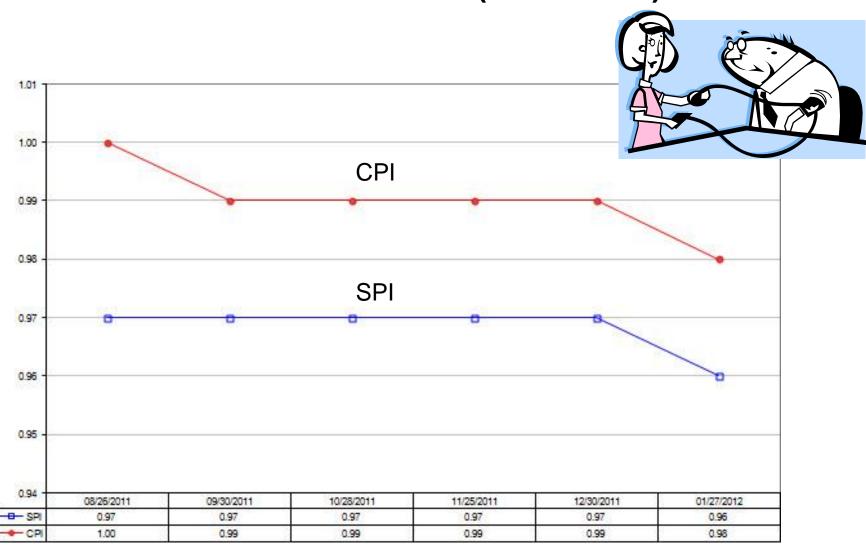


Variance Analysis Cumulative (WBS Level)

2									
3	THRES	HOLD	CHA	NGE			CO	MMENTS	
4	STATUS	MAX	STATUS	ARROW					
5	Red	0.80	Better	A					
6	Yellow	0.90	No Change	-					
7	Green	1.00	Worse	•					
8	WBS Number	DESCRIPTION			SV	CV	VAC	SPi	CPi
137	2.3.4.02.02	Engineering 9	Support and Projec	t Planning	▼	A	▼	1.00	0.97
138	2.3.4.02.04	Engineering D	Design COnstructio	n Support	▼	▼	A	1.26	0.83
139	2.3.4.02.06	Construction	Support - Process	Engineering	▼	A	-	1.00	1.12
140	2.3.4.02.07	Construction	Support - Nuclear	Safety	A	A	-	0.99	1.21
141	2.3.4.03	Construction	Procurement		A	A	▼	0.91	0.87
142	2.3.4.03.01	Remaining P	rocurements		A	A	▼	0.91	0.87
143	2.3.5	Construction -	Balance		▼	▼	▼	0.78	0.89
144	2.3.5.1	Construction	Management, Supp	oort and ODCs	•	▼	▼	0.88	0.96
145	2.3.5.1.1	Construction	Mgmt, Support & I	ODCs - CM, Spt 8	•	▼	▼	0.97	0.93
146	2.3.5.1.2	Construction	Mgmt, Support & I	ODCs - Discipline	1	▼	▼	1.00	0.98
147	2.3.5.1.4	Construction	Mgmt, Support & I	ODCs - Bulk Mat	A	▼	-	0.88	1.14
148	2.3.5.1.6	HVAC Subco	ontract		•	▼	-	0.84	0.98
149	2.3.5.1.7	CSA Subcon	tracts - Welders		▼	▼	-	0.34	0.84
150	2.3.5.1.8	Mechanical 9	Subcontracts		•	▼	-	0.89	0.88
151	2.3.5.2	Yard			▼	▼	A	0.50	0.59
152	2.3.5.1.9	Electrical Sub	ocontracts		•	▼	-	0.97	0.41
153	2.3.5.2.1	Yard - Comm	on Area		▼	A	-	0.16	3.96
154	2.3.5.2.2	Yard - Diesel	Generator		-	-	-		
155	2.3.5.2.3	Yard - Compi	ressor Building		▼	▼	A	0.02	1.13
156	2.3.5.2.4	Yard - Chiller			A	A	A	15.52	2.68
157	2.3.5.2.5	Yard - Substa	ition		▼	▼	-	0.35	1.40
158	2.3.5.3	Administration	n Building		-	-	-	1.00	0.95
159	2.3.5.2.6	Yard - Exhaus	st Stack		-	-	_	1.00	0.95
160	2.3.5.4	Process Build	ling		▼	▼	▼	0.62	0.71
	2.3.5.3.1	Administratio	on Building		A	▼	-	0.88	1.06
162	2.3.5.4.1	Process Buil	lding - Pro <u>cess Cel</u>	l Area	▼	▼	▼	0.61	0.69



Performance Index Trends (WBS Level)



PARS II Management Reserve (MR) Log



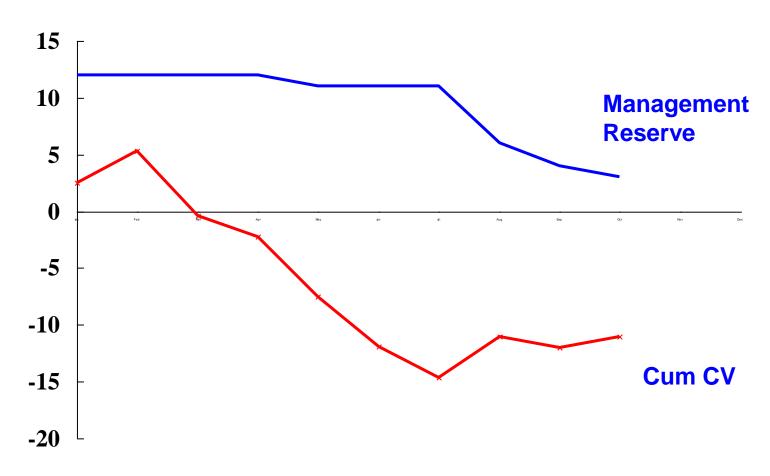
Review MR log

			Mana	agemen	t Reserve (MR) Log		
Transacti	ion	Balance	Credit	Debit	Remarks	Narrativ	re
7/31/2009		\$72,731.41	\$1,503.43		WBS:2.3.2.4.2 OBS:07 Activity: Resource:	Changes: Schedule Extentor Realized Risks (Vendo Performance) Change Description: Risk recognized in the SW Assessment and Manager been realized resulting in additional work scope and	or /PF Risk ment Plan has rework,
	С	onsider l	burn rate	e and h	and what is chang low that may impa e or inappropriate	ct the project,	approved sk ent Plan risk rocess-2" atisfactory in February lier delivered for that had ge includes the surance pversight
						required for PL-2 procurer engineered equipment tha considered to be high-risk	it are



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Is MR applied to effectively mask the cum CV?

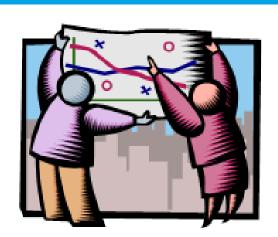


MR Balance v. CV, VAC, & EAC Trends Report; select MR v. CV tab

- 1. Validity check of data
- 2. Analyze variances
- 3. Analyze trends

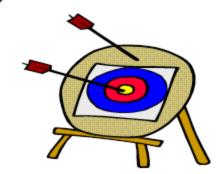


5. Predict future performance and an IEAC



- What is the EAC?
 - ACWPcum + estimate to complete (ETC) = EAC
 - So what is the first piece of information you need to begin thinking about the ETC?



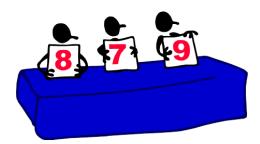


- BCWS or BCWP or ACWP
- Understanding the common EAC formulas are important as different formulas are selected based on projected contractor performance
 - Is past contractor performance expected to continue?
 - What in the contractor's operations is expected to change and why?
 - Is the change for the better or worse?

- ➤ Recall: TCPI measures the cost efficiency of performance required to achieve the contractor's EAC or BAC
 - 1.25 means \$1.25 worth of work will be done for every \$1 spent
 - 0.85 means \$.85 worth of work will be done for every \$1 spent
- ➤ Use the TCPI to evaluate reasonableness of a contractor's Estimate at Completion (EAC)

$$TCPI_{EAC} = (BAC - BCWP_{cum}) / (EAC - ACWP_{cum})$$

TCPI_{EAC} = work remaining / ETC



- What is the likelihood that project will complete within the BAC?
 - $TCPI_{BAC}$ = work remaining / (BAC ACWP_{cum})
 - This formula is of no value once ACWP exceeds BAC.

Assessing EAC Realism

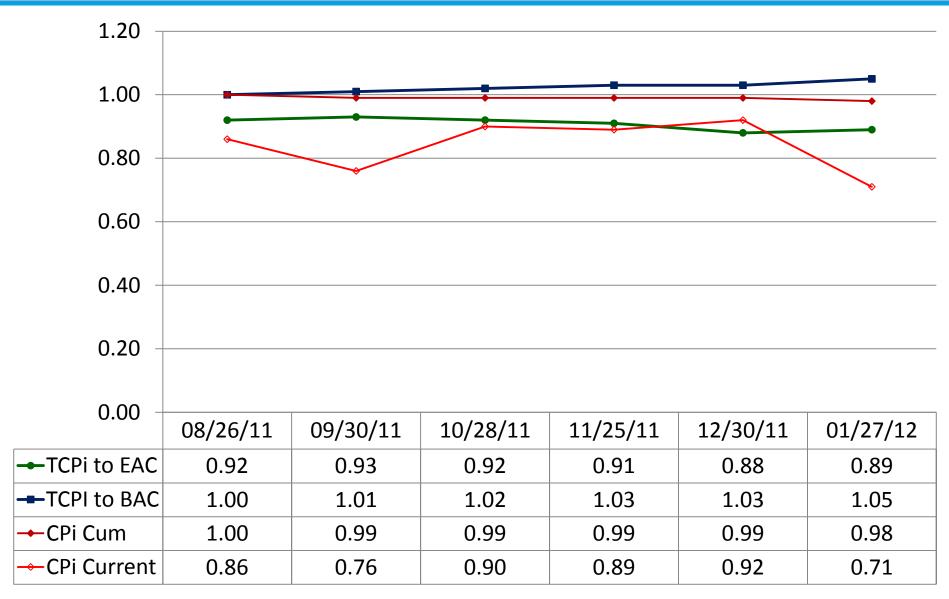


- Compare past performance (CPI) and projected future efficiency (TCPI_{EAC})
 - PARS II Reports, Analysis Reports folder
 - Performance Index Trends (WBS Level) to drill down to lower levels views (see below)
 - CPI v. TCPI (PMB Level) for project level views (next slide)
 - Rule of thumb: CPI_{cum} and TCPI_{FAC} should be within 5%
 - » EV Data Validity (WBS Level) report shows if 5% threshold has been exceeded
 - IEAC Analysis (WBS Level)

4	2.3.6.04	Mechanical Equipment	SPI _{cum}	0.70	0.67	0.68	0.72
View	SPI/CPI Tren	nd Chart	CPI _{cum}	0.98	0.97	0.97	0.96
View	Actual vs. Pr	rojected Performance Chart	TCPI To EAC	1.20	1.22	1.22	1.23
View	All Indices T	rend Chart	ТСРІ ТО ВАС	1.28	1.29	1.29	1.30

CPI vs TCPI (PMB Level)

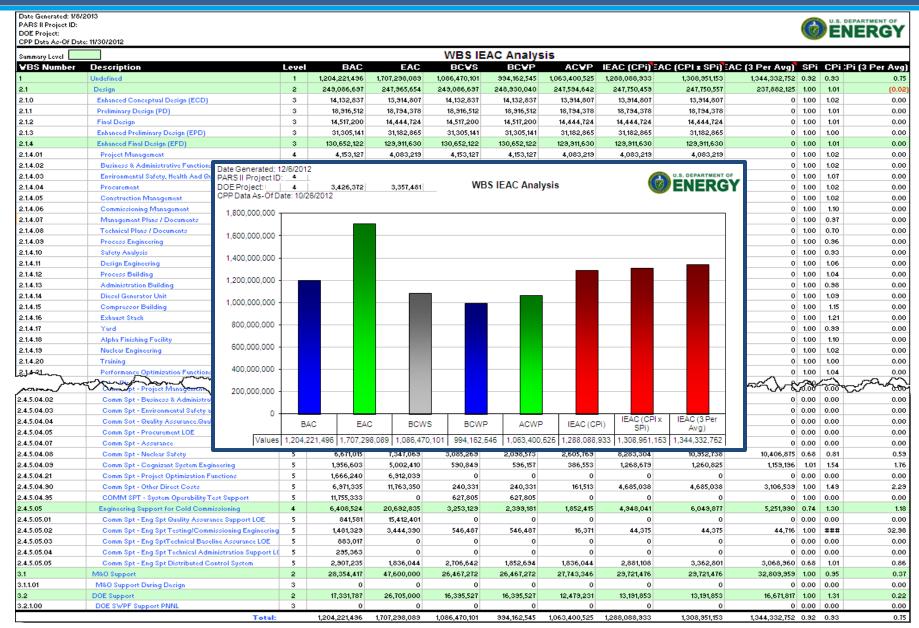




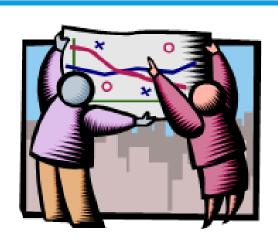
Report Name "IEAC Analysis (WBS Level)"



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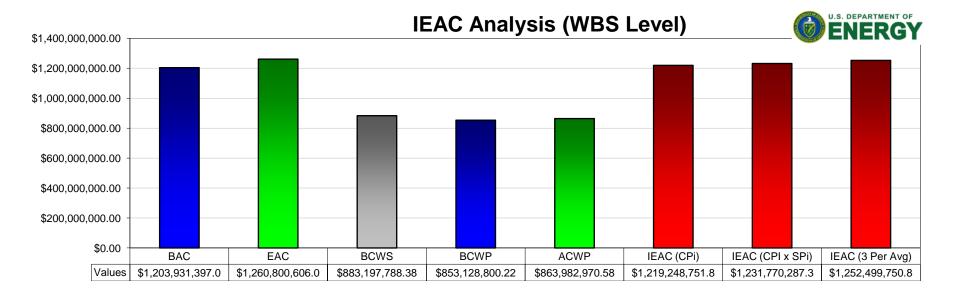
- 1. Validity check of data
- 2. Analyze variances
- 3. Analyze trends
- 4. Assess realism of contractor's EAC
- 5. Predict future performance and an IEAC



Developing an IEAC



- There are five Independent Estimate at Completion (IEAC) computed in PARS II
 - EAC_{CPI} = BAC / CPI_{cum} = ACWP_{cum} + BCWR / CPI_{cum} = Estimate at Completion (CPI)
 - EAC_{CPI3} = ACWP (BCWR/CPI₃₎ = Estimate at Completion (CPI 3 Period Ave)
 - EAC_{composite} = ACWP_{cum} + BCWR / (CPI_{cum} * SPI_{cum}) = Estimate at Completion (composite)
 - EAC_{weighted} = ACWP_{cum} + BCWR / (0.8CPI_{cum} + 0.2SPI_{cum})=Est at Completion (weighted)
 - EAC_{SPI} = BAC / SPI_{cum} = ACWP_{cum} + BCWR / SPI_{cum} = Estimate at Completion (SPI)
- IEACs are often used to establish a tolerance band



Various Independent EAC Formulas



Statistical and Independent Forecasts

3 PER AVG	6,467.8	5,777.2	6,719.3	7,971.4	7,171.6	6,603.8	ACWP + (BCWR/CPI ₃)
6 PER AVG	6,329.8	5,800.6	6,539.2	7,663.2	6,883.9	6,833.0	ACWP + (BCWR/CPI ₆)
CUM CPI	6,329.8	5,800.6	6,484.3	7,568.9	6,840.9	6,822.4	BAC / CPI _{cum}
CUR CPI	7,053.4	5,024.3	9,009.5	9,271.7	5,687.4	6,156.9	ACWP + (BCWR/CPI _{CURR})
COST & SCH	5,652.6	5,376.4	5,455.8	6,554.9	6,302.1	6,446.5	ACWP + BCWR/(.x*CPI + .x*SPI)
PERF FACTOR	5,218.0	5,210.0	5,312.0	5,851.0	5,837.0	6,096.8	ACWP + (BCWR/perf factor)
CPI*SPI	6,202.1	5,581.9	5,767.1	7,522.7	6,872.5	6,855.3	ACWP + BCWR/(CPI*SPI)

Forecast models provide differing projections.

Choose your method based on your knowledge of the project.

Various Independent EAC Formulas



Basic Formula EAC = ACWP + BCWR/performance factor

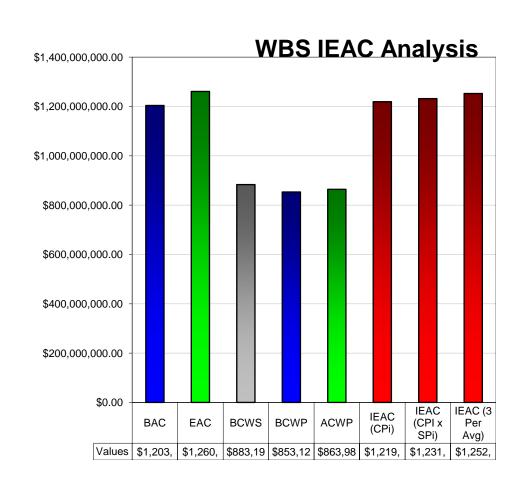
EARI	LY	MID	LA	TE
N C	Pl _{cum}	CPI _{cum}		
	<mark>Pl₃</mark> I + .2*SPI	CPI ₆ CPI ₃ .8*CPI + .2*SPI	CPI ₃	PI ₁₂ CPI ₆
a	PI*SPI I ₆ *SPI	CPI*SPI CPI ₆ *SPI		

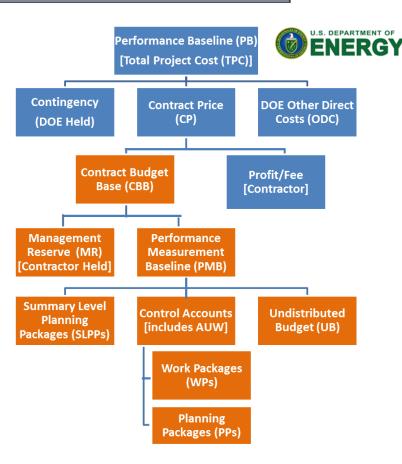
Compare Contractor's EAC with the Statistical IEACs; Consider Impact to TPC



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Given the EAC range, is the contingency sufficient to cover projected overruns without breaching the TPC?





Narrative Assessment Tips



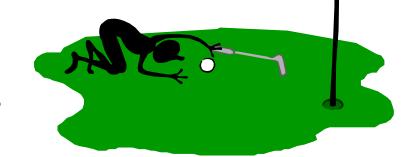
- Who prepares assessments?
 - Contractor, FPD, PMSO, HQ
- Don't just repeat CPI, SPI, etc.
 - Provide details behind the indices
 - Cost, schedule, and technical performance analysis
 - Report mitigation approaches to current risk areas
- Don't be afraid to make a prediction based on analysis, technical expertise

The sooner the risk is identified, the better the risk can be mitigated.



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- Problem: Efficiency is trending negatively.
- Cause:
 - Gather information
 - Schedules, Interviews, observations
 - Determine root cause



- Impact: Assess impact to this and other dependent activities or process flow
 - Is Critical Path Impacted?
- Corrective Actions: Assess effectiveness of CAs taken
- Predictions: Based on your special knowledge.
- Updates: Reassess as more information becomes available, and as corrective actions are taken.

- 1. DOE Contingency is?
 - a. Funds used to increase contractually authorized funding
 - b. Budget to cover overruns
 - c. Budget to increase contractual scope
 - d. Used to replenish contractor's MR
 - e. a. and c. above.
- 2. When a control account manager cannot complete the control account for the control account BAC amount due to inefficiencies, he/she should:
 - a. Request contingency
 - b. Complete the work until ACWP equals BAC and stop work
 - c. Forecast a new EAC
 - d. Update his/her resume.
- 3. When a control account is completed (all work has been accomplished):
 - a. EAC will be greater than the BAC.
 - b. ACWP equals EAC.
 - c. BCWP equals the BAC.
 - d. b. and c. above.
- 4. When is ACWP for material purchases posted against a Control Account?
 - a. When a purchase order has been place and the quote is firm.
 - b. During the same period as the BCWP is earned.
 - c. During the period when the invoice is paid.
 - d. During the same period as the BCWS is planned.

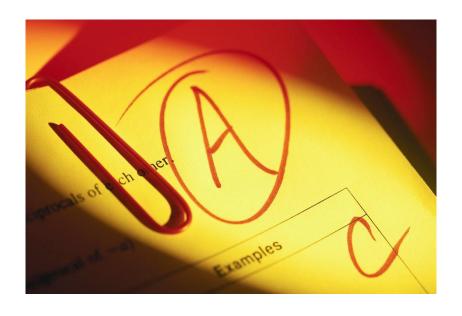
- 5. Which of the following equations is valid?
 - a. PMB + MR = CBB
 - b. Contingency + MR + PMB = TPC
 - c. MR + PMB + Profit/Fee = CBB
 - d. Contingency + MR + PMB = CBB.
- 6. Cost variances are caused when the actual costs deviate from which of the following?
 - a. The approved baseline plan or Performance Measurement Baseline (PMB)
 - b. Work accomplished
 - c. The approved PMB plus proposed changes
 - d. Actual performance is not used to determine variances
 - e. b. and c. above
- 7. A control account was completed 2 months early with an ACWP of \$500,000. The BAC is \$450,000, the BCWS is \$400,000, and the BCWP is \$450,000. The control account was supposed to take 8 months to complete, but took only 6 months. What is the EAC?
 - a. \$450,000
 - b. \$400,000
 - c. \$500,000
 - d. None of the above.
- 8. The Cost Performance Index (CPI) is:
 - a. An indication of the cost efficiency with which work has been accomplished
 - b. Only determined at the control account level
 - c. Calculated by this formula: ACWP/EAC
 - d. Calculated by this formula: ACWP/BCWS.



- 9. Reliable, valid contractor performance data should never have:
 - a. BCWP> BAC
 - b. CPI < 1.0
 - c. CPI > 1.0
 - d. ACWP > EAC
 - e. All of the above.
 - f. a. and d. above.
- 10. Identify the factors that are to be considered in the development of an Estimate to Complete (ETC) and the Estimate at Completion (EAC):
 - a. Schedule completion date and the associated remaining work including risk and opportunities
 - b. Performance to date and committed costs for remaining materials
 - c. Funding constraints and unfavorable labor and overhead rates
 - d. All of the above.
- 11. A positive cost variance could indicate which of the following?
 - a. Actual costs are being collected incorrectly.
 - b. Original budget estimates were too high.
 - c. The control account/task is underrunning.
 - d. All of the above.



- 12. What does EAC represent?
 - a. A basis for funding the work
 - b. The work
 - c. The schedule
 - d. The budget for the work.
- 13. Management Reserve (MR) is:
 - a. For activities within the scope of the contract SOW but outside the scope of any Control Account
 - b. Calculated by subtracting the BAC from the EAC
 - c. Used to cover cost growth
 - d. When scope is added to the SOW
 - e. The difference between the Total Project Cost and Contingency
- 14. When a control account is finished and has under run by \$100K:
 - a. The \$100K goes back to Management Reserve.
 - b. The \$100K is used by the PM to budget another task.
 - c. The \$100k is reflected as an under run.
 - d. More work scope and budget could be added to the CBB with possibly no increase in funding.
 - e. c. and d. above
- 15. A CPR reporting element is 65% complete and the CPI to date is 0.75. Calculations show that TCPI is 1.25. What should be concluded from this information?
 - a. Cost performance on the project is erratic.
 - b. The cost/schedule system is erratic.
 - c. The project performance will be much worse in the future.
 - d. The EAC is probably not realistic.





FPD, PMSO and APM PARS II Assessment Roles

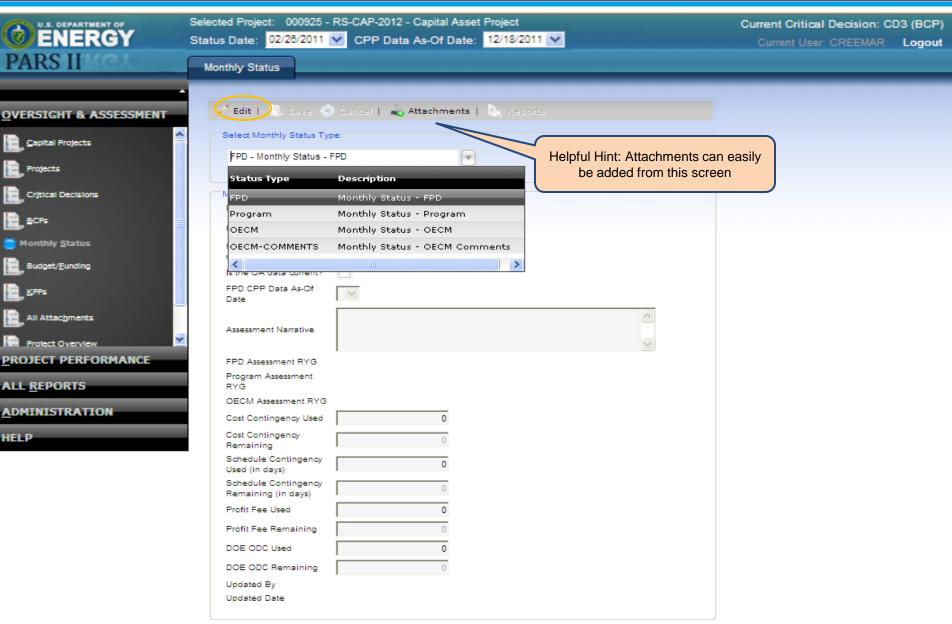




- FPD, PMSO, APM Assessment Roles
 - FPD Monthly Assessment: 3rd Business Day
 - Explanation of Close Period Process
 - BCP Coordination and Impact on an FPD Assessment
 - PMSO Monthly Assessment: 6th Business Day
 - APM Monthly Assessment: 9th Business Day
- PARS II DepSec Monthly Report
- SSS Reports Standard and Custom
- Newest Changes in Production
- PARS II Help Desk

Monthly Status - Default Screen





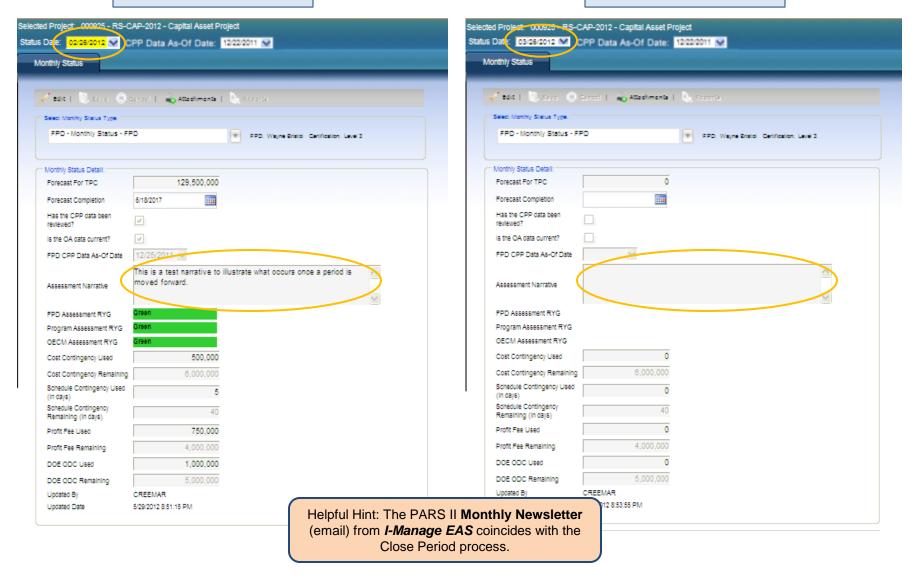
FPD Monthly Assessment - Close Period



Status Date: 3/26/2012

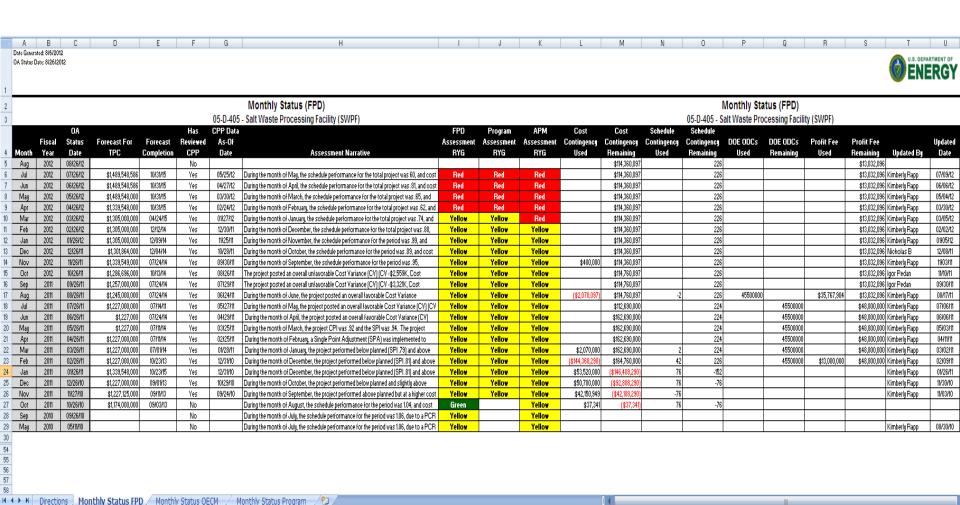
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Status Date: 2/26/2012



SSS Reports; Shared Reports: Project Reports Assessments by Project - Current and Prior Periods





Current Critical Decision: CD4 (BCP)

Selected Project: 000925 - RS-CAP-2012 - Capital Asset Project

FPD Monthly Assessment - CPP & OA Data Review



*** Expected Modules / Fields For Review ***

Has the CPP Data Been Reviewed? X

CPR Dashboard

- Displays the date and overview data for the most recent
 Contractor EV upload.
 Previously uploaded data can also be reviewed by changing the date in the dropdown to view past Contractor EV data.
- Schedule Dashboard
- Timephased Dashboard
- MR Dashboard
 - Displays only if provided in the Contractor EV upload.

Is the OA Status Data Current? $\boxed{\chi}$

- Project Attributes
- Project Contacts
- Critical Decisions
- KPPs
- BCPs
 - Verify changes are correct: TPC and schedule.

Helpful Hint: To quickly review all OA Status Data go to the Project Reports folder and run: **Project Detail** which includes tabs for all the above data



- FPD-Reported Usage Should Align with the Contractor Performance Period Being Assessed
- Verify That Remaining Balance Matches Balance in the Contractor Performance Period Being Assessed
- Enter Negative Numbers Only If Account Balance Has Increased During Performance Period
- Explain Any Usage Amounts Entered in the Narrative
 - Identified design shortfall (contingency)
 - Completed \$X of work by secondary contractor (ODCs)
 - Recovered prior fee payment (profit/fee)
- Contact APM Analyst to Resolve Any Remaining Balance Discrepancies

- Often the Field Is Aware of a BCP Before Headquarters
- DO NOT Attempt to Adjust Remaining Balance by Entering the Incorrect Usage Amount in the current Monthly Assessment
 - Continue Reporting Usage of Contingency, Fee, and ODCs as it Occurs
- In the Narrative, Explain the Discrepancy of the Incorrect Remaining Balance and State the Correct Balance
- Once the BCP Approval Is Received by APM and Is Entered in PARS II, the Remaining Balance Will Automatically Reflect the Correct Balance in the Next Reporting Period.
 - If Usage Amounts Are Incorrect, Contact APM To Correct

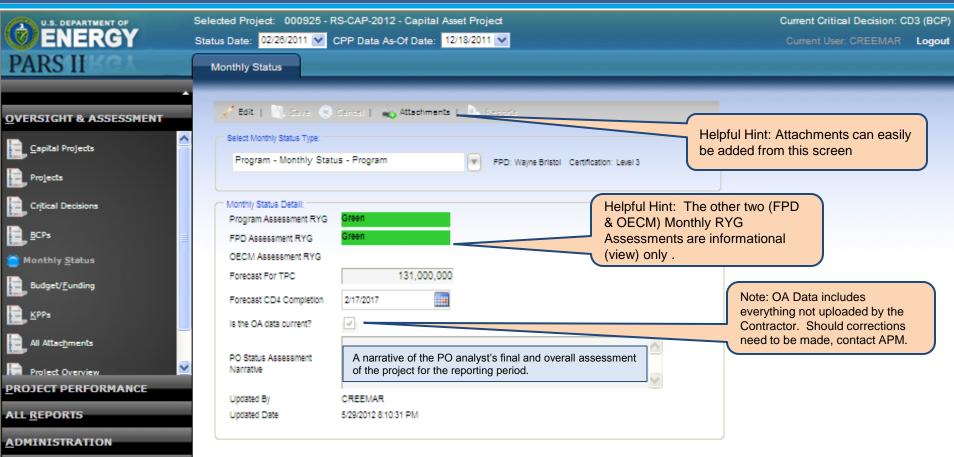


- BCP Resets Balances for All Accounts
- TPC Components Should Reflect an Accurate Balance As of the Contractor Performance Period Immediately Prior to the BCP <u>Approval</u>
 - BCP approved on 8/8/2011
 - Contractor Performance Period ended on 7/28/2011
 - Contractor-reported MR Balance + BCP adjustment = BCP Approved MR
 - Contractor-reported PMB + BCP adjustment = BCP Approved PMB, etc.
- Collaboration between APM, PMSO, FPD and Contractor Is Required To Ensure Accurate Reporting
 - Contractor data (PMB/MR) may already reflect BCP-approved adjustments
 - BCP approval paperwork is significantly delayed
 - Some cost elements are managed within contractor system (i.e. ODCs)
 - Contractor is not expected to implement BCP
- If Any Of These Conditions Exist, Explain In the Narratives

Monthly Assessment - PMSO

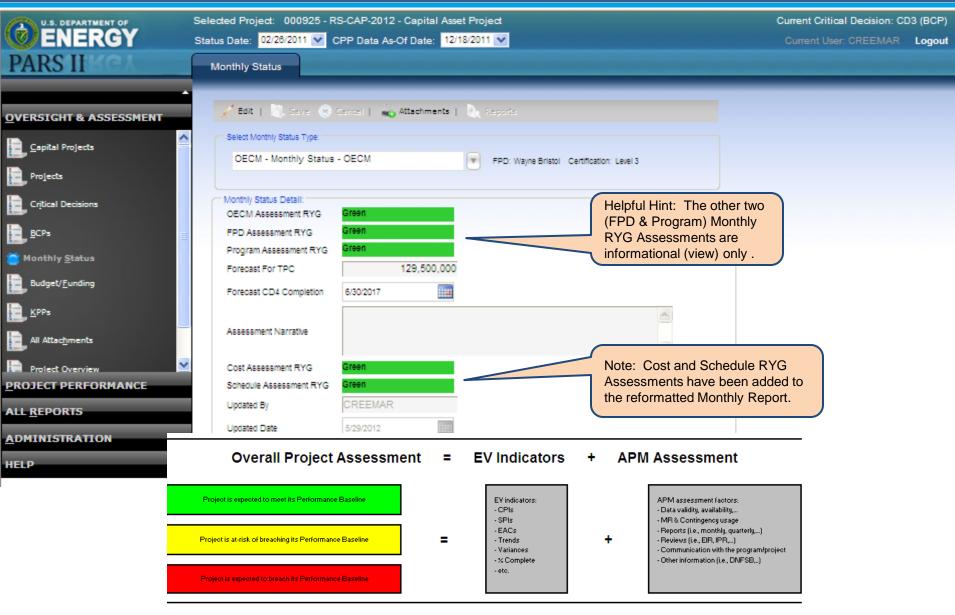
HELP





Monthly Assessment - APM





FPD, PMSO and APM PARS II Assessment Roles Wrap-UP



 APM, PMSO, FPD Assessment Roles



PARS II DepSec Monthly Report



PARS II Monthly Reporting Cycle



DS Report Due	Monthly or Quarterly Report	OA Status Date	CPP Data as of Date to review	Minimum CPP Data as of Date	Upload required by	FPD Assessment Due	PO Assessment Due	APM Assessment Due
August 25, 2012	Quarterly	8/26/2012	Jun 2012	5/10/2012	7/31/2012	8/3/2012	8/8/2012	8/13/2012
September 25, 2012	Monthly	9/26/2012	Jul 2012	6/10/2012	8/31/2012	9/6/2012	9/11/2012	9/14/2012
October 25, 2012	Monthly	10/26/2012	Aug 2012	7/10/2012	9/30/2012	10/3/2012	10/9/2012	10/12/2012
0010001 20, 2012	Wieritrity	10/20/2012	7 tag 2012	771072012	0/00/2012	10/0/2012	10/0/2012	10/12/2012
November 25, 2012	Quarterly	11/26/2012	Sep 2012	8/10/2012	10/31/2012	11/5/2012	11/8/2012	11/13/2012
December 25, 2012	Monthly	12/26/2012	Oct 2012	9/10/2012	11/30/2012	12/5/2012	12/10/2012	12/13/2012
January 25, 2013	Monthly	1/26/2013	Nov 2012	10/10/2012	12/31/2012	1/4/2013	1/9/2013	1/14/2013
February 25, 2013	Quarterly	2/26/2013	Dec 2012	11/10/2012	1/31/2013	2/5/2013	2/8/2013	2/13/2013
·	·							
March 25, 2013	Monthly	3/26/2013	Jan 2013	12/10/2012	2/28/2013	3/5/2013	3/8/2013	3/13/2013
April 25, 2013	Monthly	4/26/2013	Feb 2013	1/10/2013	3/31/2013	4/3/2013	4/8/2013	4/11/2013
May 25, 2013	Quarterly	5/26/2013	Mar 2013	2/10/2013	4/30/2013	5/3/2013	5/8/2013	5/11/2013
June 25, 2013	Monthly	6/26/2013	Apr 2013	3/10/2013	5/31/2013	6/5/2013	6/10/2013	6/13/2013
July 25, 2013	Monthly	7/26/2013	May 2013	4/10/2013	6/30/2013	7/3/2013	7/9/2013	7/12/2013



- Verify That FPD and Program Assessments have been completed
- Verify that all CPP uploads have been entered by contractor and correctly selected on the FPD Assessment screen – after 6th working day
- Verify that all Assessments have been completed after 9th working day
- Coordinate with Management for timing of DRAFT report
- Run all Validation Reports & Project Dashboard Reports
- APM coordination with Programs
- Make corrections/changes as requested/required
- Schedule approximate date of Monthly Report going final
- Create Draft Memos
- Coordinate for signatures and binding
- Coordinate with ActioNet and PARSII Administrator when Report goes Final



- System Backup
- Run all required Reports for Archiving
- Finalize Project Dashboard for External Publication
- Coordinate Approval of Email Blast to all PARS II Users
- Close Current OA Status Period
- Move Minimum CPP Data as of Date
- Run Validation Reports to Verify Period Moved Forward Correctly
- Send email Blast to all Users

PARS II Monthly Reporting - Items to Consider



Items that will affect the process:

- New Project added
- Project Activity Status Change (Cancelled, Completed, Other, etc)
- New CD Level achieved or New BCP
- Mid month uploads of CPP data
- Corrected upload of CPP data
- FPD incorrectly entering usage of Contingency, etc
- FPD making corrections/changes to Assessment after the 3rd working day
- FPD incorrectly adding next months assessment before period has been moved forward
- Coordination issues with APM analysts
- Missing data uploaded or data corrected after 3rd working day
- Overall Assessment color change by an APM analyst
- Any changes that are required after the OA Status Period has already been moved forward
- Missing/incorrect information on Red/Yellow Report
 - NOTE: System is live for all users, no lock out functionality

Reasons for New Report Format

- Ability to Quickly Identify Changes from Prior Period Report
 - Overall Assessment Changes
 - New BCPs
 - Reached CD-4
 - New Projects Added
 - Achieved Next CD Level
- Provide Greater Visibility into Project Performance
- Demonstrate Performance Trends

Report Content

- Updated Program Summary
- High-Level Changes from Prior Period Report
- Detailed Report for Each Red and Yellow Project

Summary Pages – Program Summary



Report Date: 2/23/2012 OA Status Date: 2/26/201	2					February 20	012 Re	port					U.S. DEPART	
	Project Summary by Program (Current Performance Baseline)													
Dro gram	_ Tot	tal Drainata		tal Projects		tal Projects		tal Projects		tal Projects		tal Projects	Projec Accep	est CD-2 ts with
Program	No.	tal Projects \$(M)	No.	Pre CD-2 \$(M)	Post CD-2 Post CD-2 Green Post CD-2 Yellow Post CD-2 Red No. \$(M) No. \$(M) No. \$(M)								No.	tus \$(M)
EERE	6	\$307.9	1	\$15.9	5	\$292.0	5	\$292.0					100%	100%
EM	47	\$55,895.4	19	\$34,510.0	28	\$21,385.4	14	\$6,001.1	3	\$1,439.4	11	\$13,944.9	61%	35%
FE	1	\$72.8			1	\$72.8	1	\$72.8					100%	100%
NA	27	\$11,641.8	13	\$5,551.8	14	\$6,090.0	10	\$655.9	1	\$4,857.1	3	\$576.9	79%	91%
NE	8	\$3,422.4	7	7 \$3,405.0 1 \$17.4 1 \$17.4								100%	100%	
SC	43	\$10,763.4	22	\$8,331.4	21	\$2,432.0	21	\$2,432.0					100%	100%
DOE Total	132	\$82,103.7	62	\$51,814.1	70	\$30,289.6	52	\$9,471.2	4	\$6,296.5	14	\$14,521.8	80%	52%

- Summary of Program Portfolio Performance
- RED/YELLOW/GREEN Allocation Is Based on the APM Assessment of Performance to the DOE Performance Baseline

Summary Pages – Assessment Change



age 275

Report Date: 2 OA Status Da				Februa	ary 2012 R	eport								
			Projects with	Changed	l Overall	Project	Assessn	nent						
								As	sessment dec	clined from GF	REEN to RED	R ▼ (G)		
								Ass	essment decl	ined from YEL	LOW to RED	R ▼ (Y)		
	Assessment declined from GREEN to YELLOW Y ▼													
	Assessment improved from RED to YELLOW Y 🛕 (I Assessment improved from YELLOW to GREEN G 🐧													
												G ▲ (Y)		
								Ass	essment imp	D to GREEN	G ▲ (R)			
Program	PARS II Project ID	DOE Project Number	Project Name	Site	TPC (\$M) At CD-2	Approved TPC (\$M)	APM Forecast TPC (\$M)	CD-4 Date at CD-2	Approved CD-4 Date	APM Forecast CD-4 Date	Project % Complete	Overall Assessment		
EM	000417	SR-0030.R1.2	P Reactor Decommissioning	SRS	\$142.2	\$142.2	\$81.0	01/31/12	01/31/12	02/29/12	100%	R ▼ (G)		
EM	000419	SR-0030.R1.4	R Reactor Decommissioning	SRS	\$149.2	\$149.2	\$76.5	01/31/12	01/31/12	02/29/12	100%	R ▼ (G)		
EM	000898	OR-0042.C1.1	042.C1.1 Tank W1A ORNL \$47.5 \$47.5 09/30/12					09/30/12	09/30/12	90%	Y ▼ (G)			
NA	000392	08-D-701	Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP)	LANL	\$245.2	\$213.1	\$213.1	3.1 01/24/13 01/30/13 01/30/13 80%		80%	R ▼ (Y)			
NA	000751	08-Y12MIE-1	Oven Consolidation	Y-12	\$22.6	\$22.6	\$28.9			G ▲ (R)				

- Projects with a Change in Overall Assessment from Prior Report
- Identifies Improvements and Declines

Summary Pages – Approved BCPs



Report Date: 2 OA Status Da				February 2	2012 Rep	ort								
			Performano	ce Baseline l	BCPs S	ince Last Re	por	t						
							A	Increase in c	ost, schedule,	orso	ope appro	ved by BCP		
							▼	Decrease in	cost, schedule	e, or s	cope appr	oved by BCP	ı	
							_	No change in	n cost, schedu	le, or	scope app	roved by BC	P	
Program	PARS II Project ID	DOE Project Number	Project Name	FPD	Approval Date	Approved By		hange in Cost (\$M)	Approved TPC (\$M)	Sc		Approved CD-4 Date		nge in ope
EERE	000795	10-EE-05001	Carbon Fiber Technology Facility	David Arakawa	12/21/11	Johnny Moore	•	-\$1.4	\$28.6	_		09/30/13	_	No
NA	000750	08-Y12MIE	Microwave Deployment	Teresa M. Robbins	01/31/12	Daniel Hoag	_		\$19.4	A	335	12/31/12	_	No

- New BCP Approvals Received by APM
- BCPs that impact approved TPC, CD4 Date, and/or Project Scope

Summary Pages – Completed Projects



age 277

Report Date: 2 OA Status Da				Febr	uary 2012	Report								
				Project	s Achiev	/ed CD-4								
							A	Increa	se from Origir	nal Performa	nce Bas	seline cost, s	chedul	e, or scope
	▼ Decrease from Original Performance Baseline cost, schedule, or scope													
							1	No Ch	ange in Origir	nal Performa	nce Bas	seline cost, s	chedul	e, or scope
Program	PARS II Project ID	DOE Project Number	Project Name	Site	Project Success	Approved By	Approved TPC (\$M) at CD-2	TPC (\$M) on CD-4			Appro	e of CD-4 val Memo		Scope mplete
SC	000481	MIE-001	LCLS Ultrafast Science Instruments (LUSI)	SLAC	Yes	Harriet Kung	\$60.0	_	\$60.0		•	02/02/12	ı	Yes
sc	000515	SC-25-09-02	Facility for Advanced Accelerator Experimental Tests (FACET)	SLAC	l Yes	James Siegrist	\$14.5	_	\$14.5	02/28/12	•	01/31/12	-	Yes

- CD-4 Approval Memos <u>Received</u> by APM
- Identifies Projects Completed in Current Period
- CD-4 Projects Remain on the Monthly Report in the Reporting Period when CD-4 Paperwork Is Received

Summary Pages – New Projects



Report Date: OA Status Da				Janua	ry 2012 Repo	ort					
				New P	rojects Add	ded					
Program	PARS II Project ID	DOE Project Number	Project Name	FPD	Site	Current CD	Current CD Approval Date		CD-0 TPC Low (\$M)	CD-0 TPC High (\$M)	TPC (\$M) at CD-2
sc	000920		Dynamic Compression Sector	Frank Gines	ANL	CD0	12/13/11	12/13/11	\$15.0	\$25.0	

- All Active Capital Asset Projects that Were Added in Current Period
- Details Growth in Portfolio Size
- Captures Projects Entered at CD-2/3

Summary Pages – New Milestone Achieved



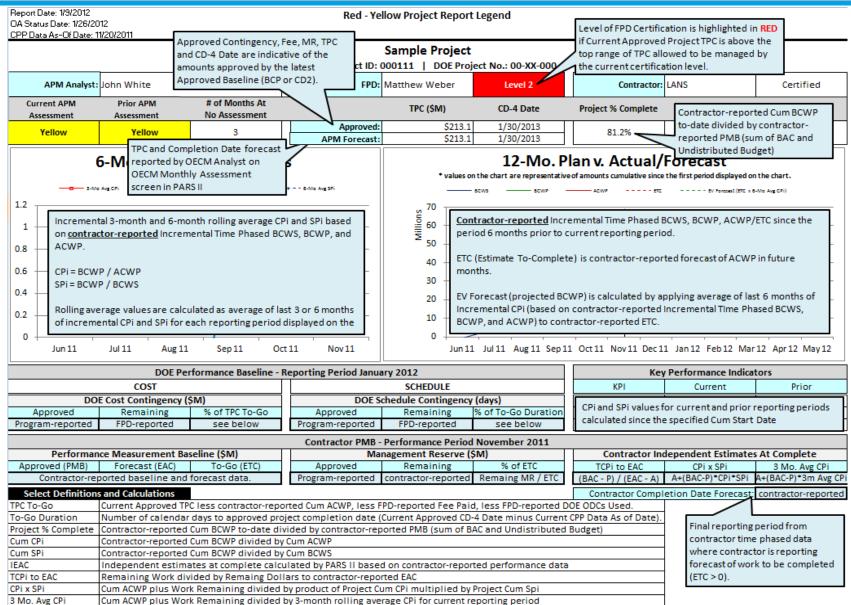
Report Date: OA Status Da				Febru	uary 2012 F	Report					
			Proj	ects Achiev	ed Next	Critical Deci	sion				
Program	PARS II Project ID		Project Name	FPD	Site	Contractor	CD Change	Approved By	TPC Ran	ige (\$M)	Approved TPC (\$M) at CD-2
NA	1000420	OPS-12- NNSA-DCS	Dynamic Compression Sector (DCS) at the Advanced Photon Source (ANL-	Frank Gines	ANL		CD0 → CD1	Christopher Deeney	\$15.0	\$30.0	
NE	000843		Material Security and Consolidation	Mark Arenaz	INL		CD1 → CD3	Richard Provenchor	\$11.5	\$23.3	\$17.4

- Critical Decision Approval Memos <u>Received</u> by APM
- Includes All New Critical Decisions Achieved Except for CD-0,
 CD-4, and Closeout

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Red/Yellow Project Report – Legend

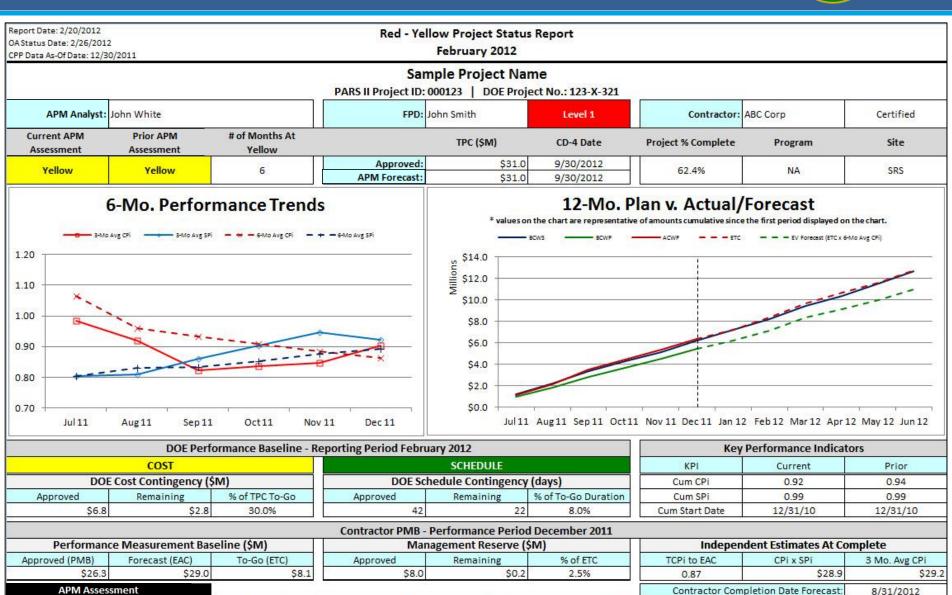




Sample Red/Yellow Project Report



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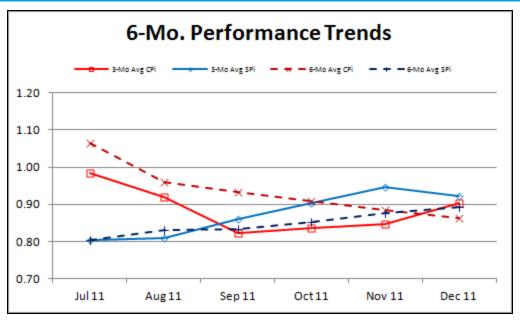
The assessment remains Yellow due to the ongoing delays. While there is no indication that project will slip beond the approved CD-4 Date, there is a high risk of project breaching approved TPC because of the experienced delays.

Red/Yellow Project Report Header



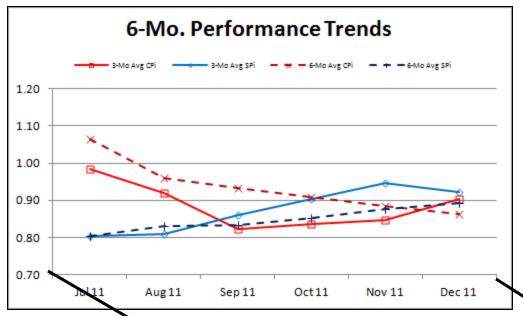
Report Date: 2/20/2012 DA Status Date: 2/26/2012 CPP Data As-Of Date: 12/30			Red - Yel	low Project Status F February 2012	Report			
		-	PARS II Project ID:	nple Project Nam 000123 DOE Projec	e t No.: 123-X-321			90
APM Analyst:	John White		FPD:	John Smith	Level 1	Contractor:	ABC Corp	Certified
Current APM Assessment	Prior APM Assessment	# of Months At Yellow		TPC (\$M)	CD-4 Date	Project % Complete	Program	Site
Yellow	Yellow	6	Approved: APM Forecast:	\$31.0 \$31.0	9/30/2012 9/30/2012	62.4%	NA	SRS

- High-Level Project Information
- All of the Data Resides in PARS II
- Note:
 - FPD Certification Level is highlighted RED if current approved project TPC is above the top range of TPC allowed to be managed by the current FPD certification level.
 - Contractor Certification is highlighted in RED if contractor EVMS is Not Certified
 - Project % Complete is calculated by PARS II from contractor-reported data
 - % Complete = BCWP_{cum} / PMB
 - PMB = BAC + UB



- Provides 3 and 6 Month Rolling Average CPi and SPi Trends
- Based on Incremental CPi and SPi





- **Provides 3 and 6 Month** Rolling Average CPi and SPi **Trends**
- **Based on Incremental CPi** and SPi
 - **Calculated from Contractor** Timephased SPA Data

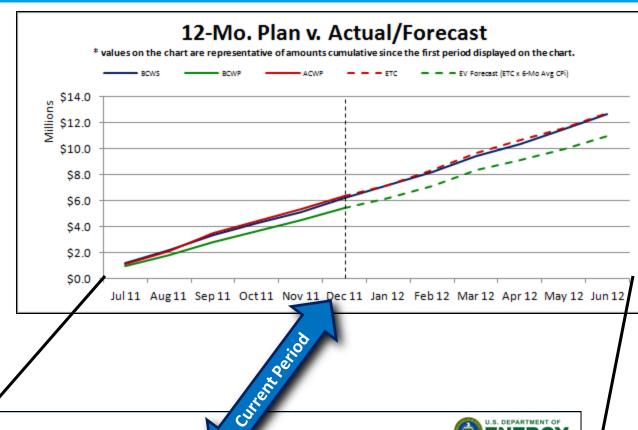
DOE Projec	e: 3/7/2012 ject ID: 000123 t: 123-X-321 - Sa s-Of Date: 1/31/2				B -1	N-II B:		2-4-114				ERGY
						Yellow Proje Month Trend C	•	Detail 1				
₩BS Number	TYPE	09/30/10	10/24/10	11/21/10	12.76/10	01/23/11	02/20/11	03/27/11	04/24/11	05/22/11	06125711	07/24/11
01	Inc BCWS	1,818,211	1,264,241	1,412,690	1,211,171	1,121,623	1,233,587	976,761	1,112,061	930,497	840,910	1,073,404
	Inc BCWP	3,251,319	1,184,250	1,101,180	1,021,396	894,756	949,269	840,912	1,059,416	833,692	832,170	946,250
	Inc ACWP	842,984	1,291,451	1,060,112	978,390	854,466	1,106,149	982,551	1,398,658	931,223	935,858	025,855
	Inc CPi	3.86	0.92	1.04	1.04	1.05	0.86	0.86	0.76	0.90	0.89	0.92
	Inc SPi	1.79	0.94	0.78	0.84	0.88	0.77	0.86	0.95	0.90	0.99	0.88
	6mo, CPi						1.46	0.96	0.93	0.91	0.88	0.86
	6mo. SPi						0.99	0.83	0.83	0.85	0.88	0.89
	3mo. CPi			1.94	1.00	1.04	0.98	0.92	0.82	0.84	0.85	0.90
	3mo. SPi			1.17	0.85	0.81	0.80	0.81	0.86	0.90	0.95	0.92

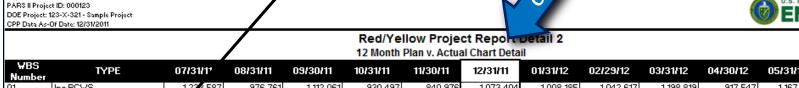


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- 12 Month Performance Snapshot
- Based on Contractor Timephased SPA and ETC Data

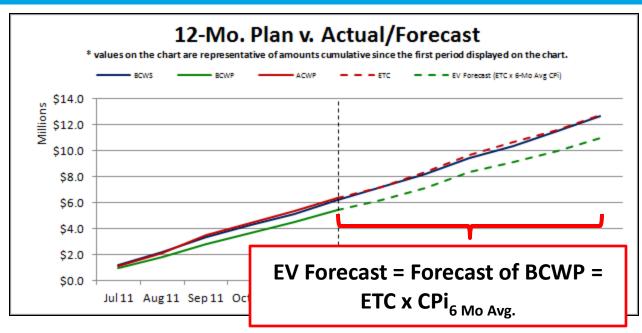
Report Date: 3/7/2012





Number	TYPE	บทสหาร	08/31/11	09/30/11	10/31/11	11/30/11	12/31/11	UKSKIZ	UZIZBNZ	03/31/12	04/30/12	05/31/12	06/30/12
01	Inc BCWS	1,223,587	976,761	1,112,061	930,497	840,976	1,073,404	1,008,185	1,042,617	1,198,819	917,547	1,167,833	1,156,796
	Inc BCWP	949,269	840,912	1,059,416	833,692	832,170	946,250						
	Inc ACWP	1,106,149	982,551	1,398,658	931,223	935,858	1,025,855						
	Inc ETC							826,496	1,116,137	1,361,747	969,263	946,659	1,171,168
	Cum BCWS Since 07/31/11	1,233,587	2,210,347	3,322,408	4,252,905	5,093,881	6,167,284	7,175,469	8,218,087	9,416,905	10,334,453	11,502,286	12,659,082
	Cum BCWP Since 07/31/11	949,269	1,790,181	2,849,597	3,683,289	4,515,459	5,461,709						
	Cum ACWP Since 07/31/11	1,106,149	2,088,699	3,487,358	4,418,581	5,354,438	6,380,294						
	Cum ETC Since 07/31/11						6,380,294	7,206,789	8,322,927	9,684,674	10,653,937	11,600,596	12,771,765





- EV Forecast Expects ETC to Turn into ACWP in Future Periods
- Current Period 6-Month Average CPi Is Used for Calculation
 - 6-month Average CPi for current period can be found in the data from 6 Month Performance Trend Chart



	DOE Performance Baseline - Reporting Period February 2012											
	COST				SCHEDULE							
DOI	Cost Contingency (SM)]	DOE Sc	hedule Continge	ncy	(days)					
Approved	Approved Remaining % of TPC To			Approved	Remaining		% of To-Go Duration					
\$6.8	\$2.8	30.0%	ΙΓ	42	_	22	8.0%					

- Cost and Schedule Color Assessment by OECM Analyst
 - Cannot be worse than Overall Assessment
 - Cost and Schedule Assessment can be different
- Approved: Amount Approved by Current Baseline (CD-2 or BCP)
- Remaining: Product of FPD Usage Reporting
 - Remaining = Approved Used Since Baseline

DOE Performance Baseline – Cost



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		DOE Pe	rformance Base	eline - Repo	orting Period Febi	ruary 2012				
		COST				SCHEE	OULE			
	DOE Cos	t Contingency	(\$M)		DOE S	chedule Cor	ntingency (days)		
Approv	/ed	Remaining	% of TPC To	o-Go	Approved	Remai	ning 9	% of To-Go Duration	on	
	\$6.8	\$2	.8 30.0%		42	2	22	8.0%		
		- Course		Red/Y	ello ct Re	port Detail on	4		DENE	30 100 100 100 100 100 100 100 100 100 1
PARS II Project	Current Baseline	Current Baseline Date Approved	Approved Fee/Profit at CD- 2	Fee/Profit Remaining	Fee/Profit Use.	od DOE	DOE ODCs Remaining	DOE ODCs Used since CD-2	Sunk Costs at CD-2	Contractor Cum ACWP as of 07/24/11
000660	CD-2	03/25/10	750,000	rtemaning	750,000		rtemaning	SINCO OD-2	05-2	20,912,873
	TPC Use	ed by DOE								
Fee Paid	ODCs Used	Sunk Costs	Total							
750,000			750,000							
		y Contractor	200				oved TPC (CD-	31,000,000	MINITS	1
	Cumulative ACWI	AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	Total			0.000	Total TPC Use		WIINUS	1
		20,912,873	20,912,873				TPC To-G	0: 9,337,127		1

Calculations Used

Total TPC Used

PLUS

Contractor Used

20.912.873

Total

21,662,873

DOE Used

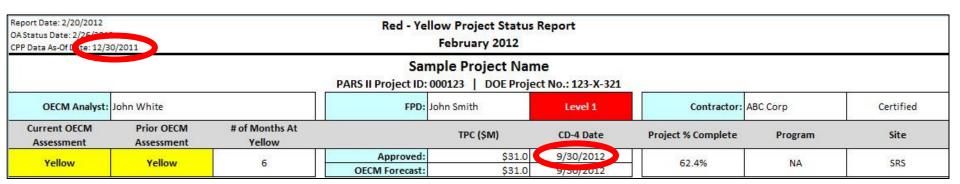
- % of TPC To-Go = Contingency_{remaining} / TPC To-Go = (2,800,000 / 9,337,127)
- TPC To-Go = TPC_{approved} (FEE_{paid} + ODC_{used} + Sunk Cost + ACWP_{cum})

DOE Performance Baseline – Schedule



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DOE Performance Baseline - Reporting Period February 2012						
COST				SCHEDULE		
DOE Cost Contingency (\$M)				DOE Schedule Contingency (days)		
Approved	Remaining	% of TPC To-Go		Approved	Remaining	% of To-Go Duration
\$6.8	\$2.8	30.0%		42	22	8.0%



Calculations Used:

- % of To-Go Duration = Contingency_{remaining} / To-Go Duration
- To-Go Duration = Approved CD4 Date CPP Date = 9/30/2012 12/30/2011

Key Performance Indicators – CPi & SPi



 Cumulative Cost and Schedule Performance Indices

Key Performance Indicators				
KPI	Current	Prior		
Cum CPi	0.92	0.94		
Cum SPi	0.99	0.99		
Cum Start Date	12/31/10	12/31/10		

- Current Reporting Period Compared to Previous Reporting Period
- Uses Sum of Incremental BCWS, BCWP, and ACWP since the Date Indicated as Cum Start Date
- Cum Start Date Currently Indicates Latest Approved Baseline
 (CD-2 or BCP)
- Calculated from Contractor Timephased Data
- Displays Total Project CPi and SPi if Cum Start Date Is Not Set or Timephased Data Not Available

Contractor Performance Measurement Baseline



Contractor PMB - Performance Period December 2011								
Performance Measurement Baseline (\$M) Management Reserve			nagementReserve (\$	SM)	Indeper	ndent Estimates At Co	mplete	
Approved (PMB)	Forecast (EAC)	To-Go (ETC)	Approved	Remaining	% of ETC	TCPi to EAC	CPi x SPi	3 Mo. Avg CPi
\$26.3	\$29.0	\$8.1	\$8.0	\$0.2	2.5%	0.87	\$28.9	\$29.2
						Contractor Con	pletion Date Forecast:	8/31/2012

- Approved MR = Amount Approved by Current Baseline (CD-2 or BCP)
- Approved PMB = Current BAC + UB Amounts Reported by Contractor in CPP Upload
- Calculations Used:
 - TCPi to EAC = (BAC BCWP_{cum}) / (EAC ACWP_{cum})
 - MR as % of ETC = MR_{remaining} / ETC
 - Independent Estimate At Complete (IEAC)
 - Using Industry Standard Formulas
 - IEAC_{CPi x SPi} = ACWP_{cum} + (BCWR / (CPi_{cum} x SPi_{cum}))
 - IEAC_{3 Mo Avg. CPi} = ACWP_{cum} + (BCWR / CPi_{3-mo Avg.})
- All Other Elements Are Reported by Contractor in CPP Upload

Contractor Performance Measurement Baseline



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Contractor PMB - Performance Period December 2011								
Performance Measurement Baseline (\$M)			Management Reserve (\$M)			Independent Estimates At Complete		
Approved (PMB)	Forecast (EAC)	To-Go (ETC)	Approved	Remaining	% of ETC	TCPi to EAC	CPi x SPi	3 Mo. Avg CPi
\$26.3	\$29.0	\$8.1	\$8.0	\$0.2	2.5%	0.87	\$28.9	\$29.2
						Contractor Con	pletion Date Forecast:	8/31/2012

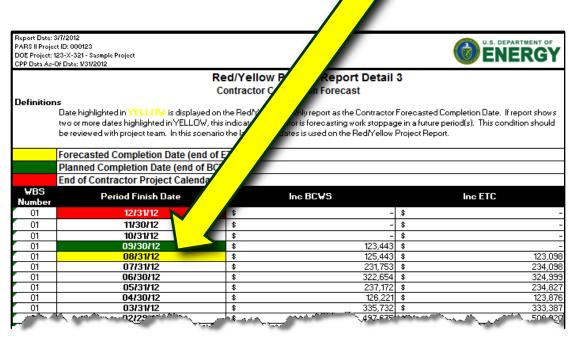
Contractor Completion Date Forecast

Based on contractor-reported time phased
 Estimate To Complete (ETC)

Last Period with ETC > 0

Identifies Scheduled Completion

- Last Period with
 - BCWS > 0



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APM Assessment

The assessment remains Yellow due to the ongoing vessel delays. While not definitive, there are indications that the delivery of the first six large ASME vessels may slip from late Mar 2012 to early Apr, and the remaining four vessels will arrive in late Apr/early May rather than early Apr.

Neither the current monthly nor the cumulative EV cost and schedule data are good indicators of project performance, because the project's performance baseline is no longer aligned with the construction execution schedule. The construction schedule has undergone extensive changes in order to mitigate the impacts of the vessel delays. The Federal and Contractor project staffs have agreed not to incorporate the mitigation efforts and re-sequencing of work into the performance baseline until there is a high level of confidence in the large ASME vessel delivery dates. The IPT is developing a plan to address the schedule impacts of the vessel delays, and the Contractor is preparing a bottoms-up cost estimate to quantify the associated cost impacts. The new baseline, which will incorporate this schedule and cost information, will provide a much more meaningful basis on which to gauge performance.

Construction work is approximately 55% complete. The project has approximately \$8M in remaining Management Reserve and \$114M in remaining DOE Contingency with \$350M in to-go construction and commissioning costs (BCWS). However, the FPD's current estimate at completion is \$1,305M, which leaves only \$34M in uncommitted DOE Contingency. The project probably does not have sufficient dollar reserves to weather any further significant schedule delays. It is also essential that construction productivity, which has been adversely affected by the re-sequencing activities, improve significantly once the vessels have been installed.

- Detailed APM Narrative on the Project
- Provides APM Perspective on Project Performance
- Explains Data Anomalies
- Identifies Major Milestones



- Reasons for New Report Format
 - Ability to Quickly Identify Changes from Prior
 Period Report
 - Provide Gro
 - Demonst
- Report Cor
 - Updated Pro
 - High-Level Charge Frior Period Report
 - Detailed Report for Each Red and Yellow Projects

PARS II SSS Reporting Custom Reporting



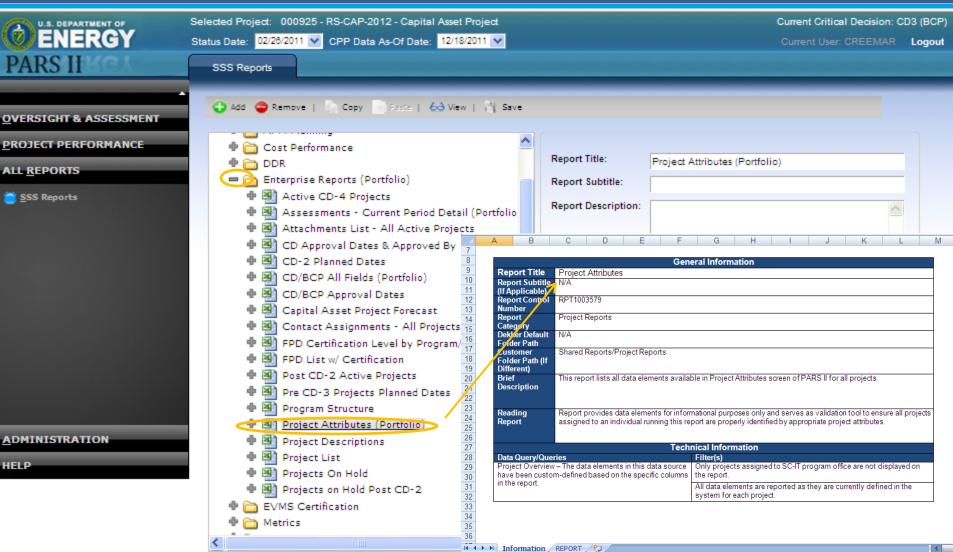
Reporting Overview



- Information Tab
- Shared Reports
- My Reports
- Configuration Query
- Data Sources
- Reports Button By Module
- Request A Custom Report
- SSS Reports Error Message
- Contractors' Access to SSS Reports

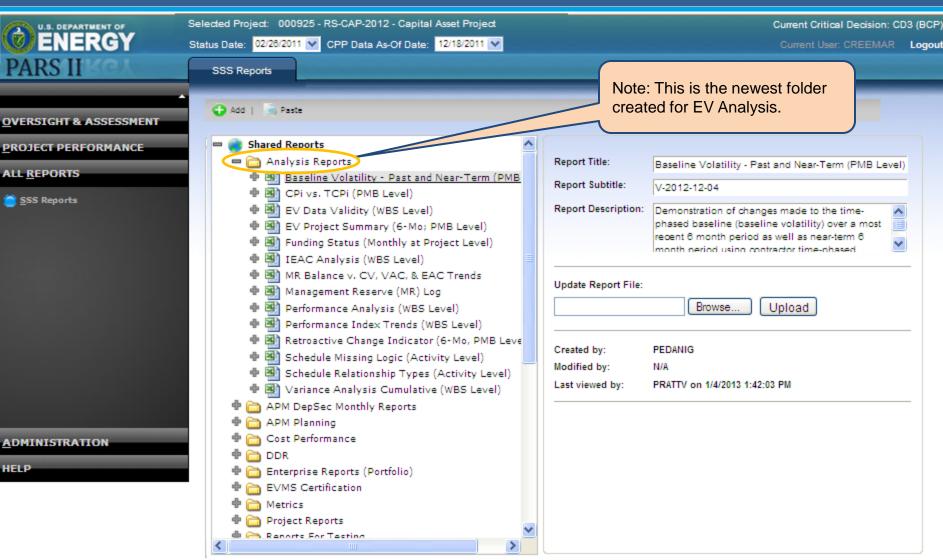
SSS Reports - Information Tab





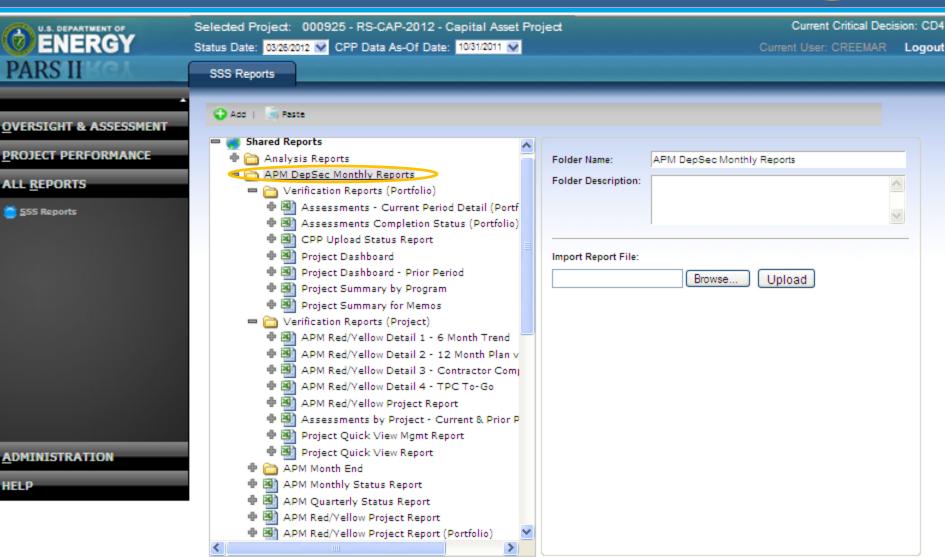
SSS Reports - Analysis





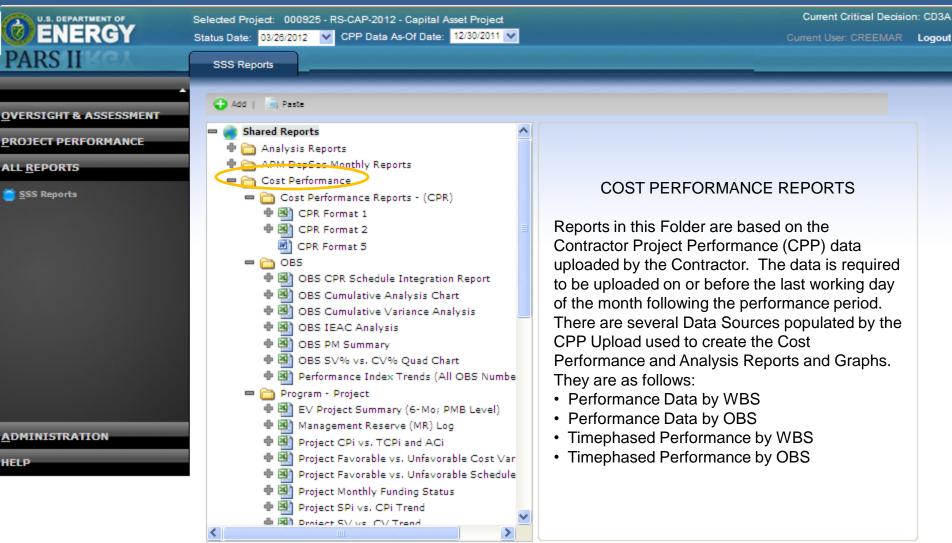
SSS Reports - APM DepSec Monthly





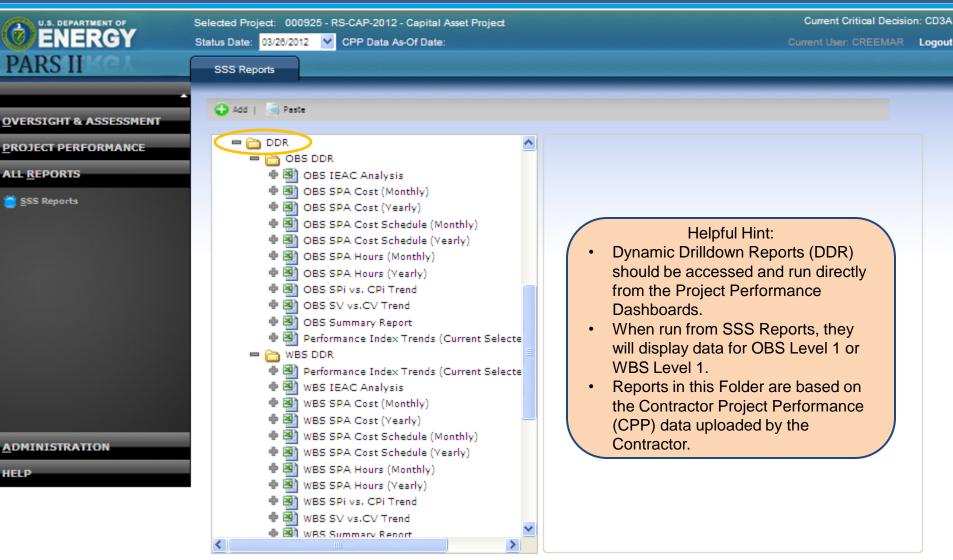
SSS Reports - Cost Performance





SSS Reports - DDR (Dynamic Drilldown Reports)

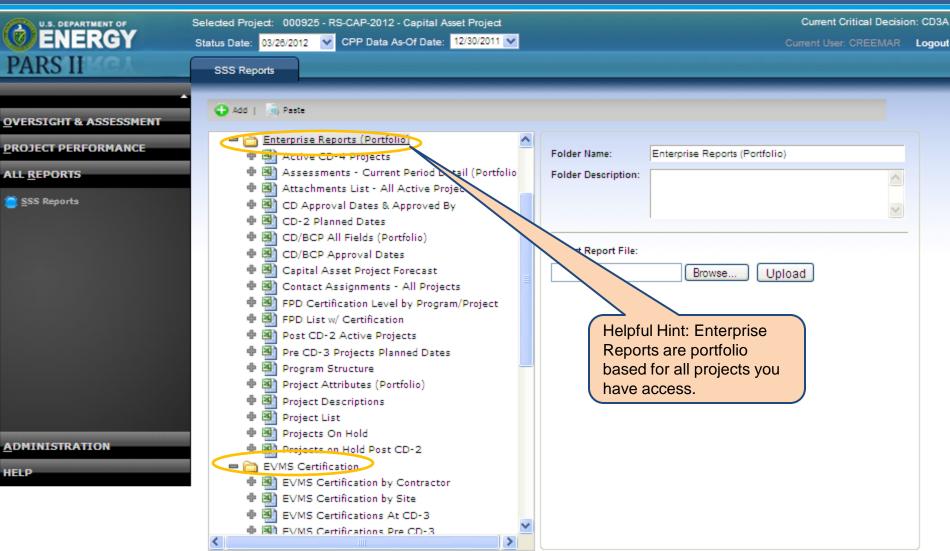




SSS Reports - Enterprise (Portfolio) and EVMS



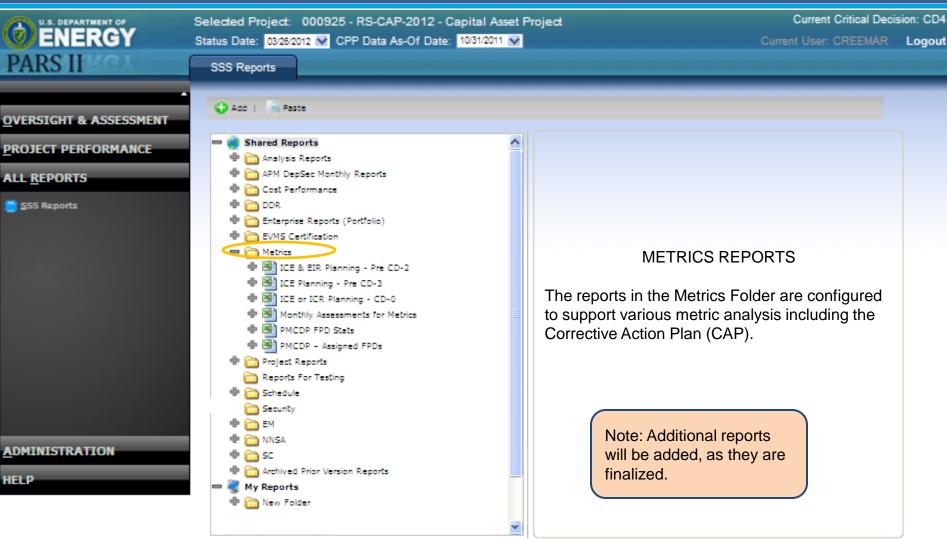
Page 302



Note: Program offices that have View access to all projects will need to filter by Program or new reports will need to be created.

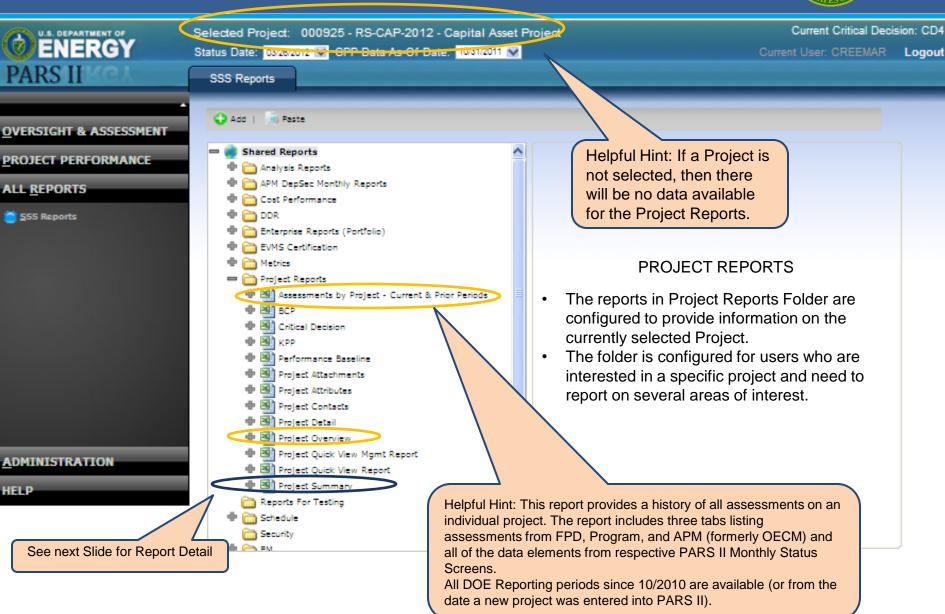
SSS Reports - Metrics





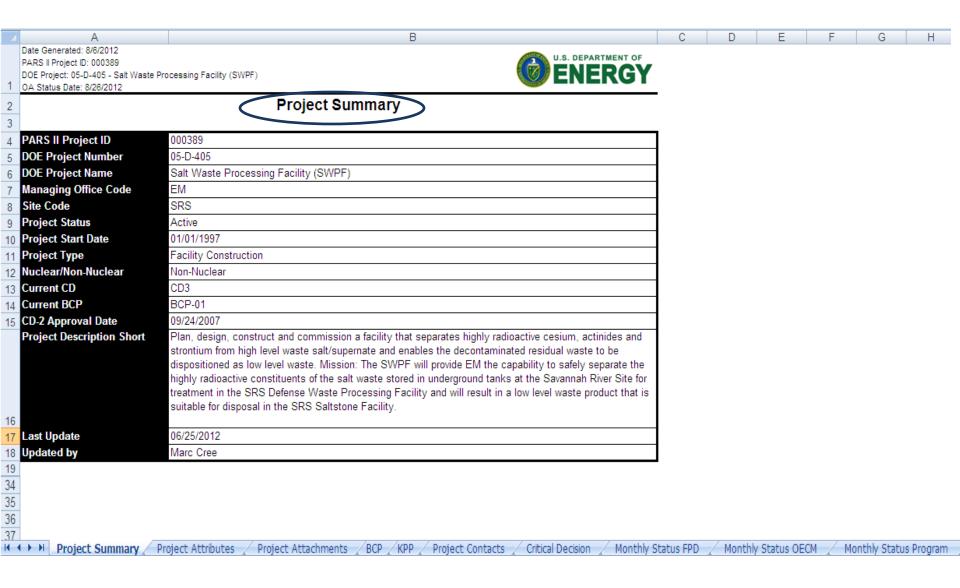
SSS Reports - Project





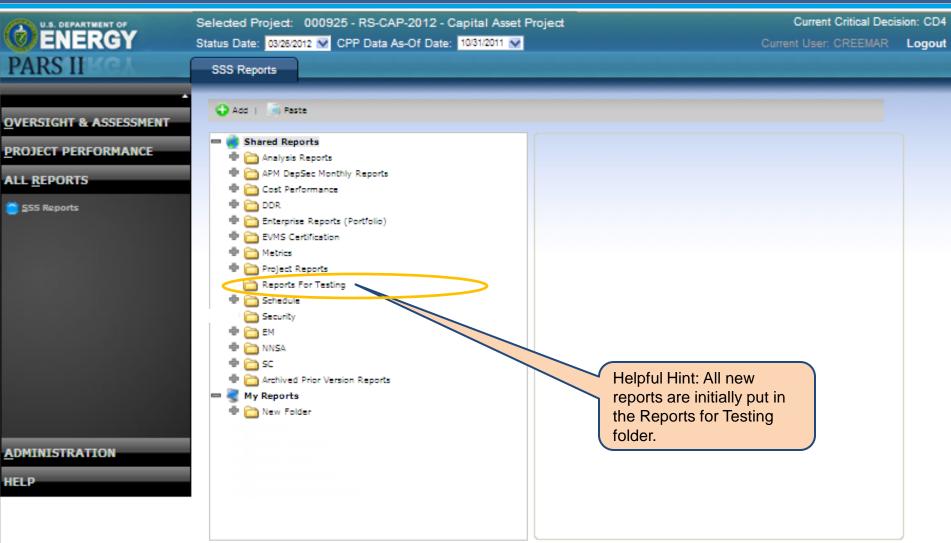
SSS Reports - Project Project Detail





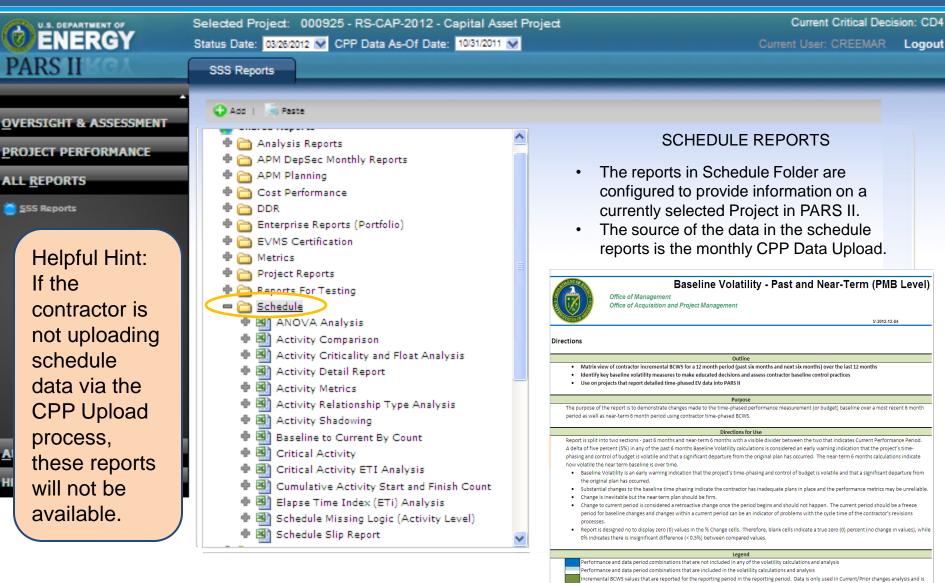
SSS Reports - Reports For Testing





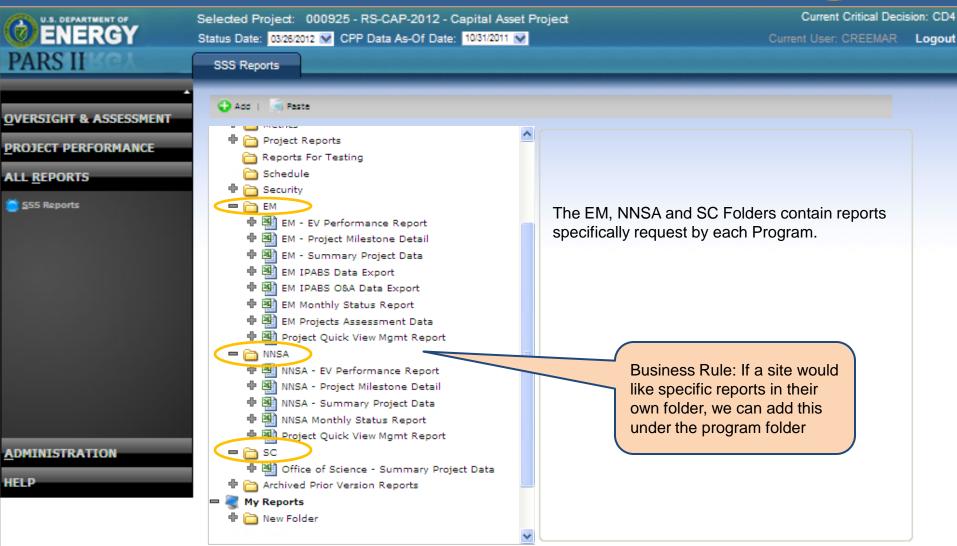
SSS Reports - Schedule





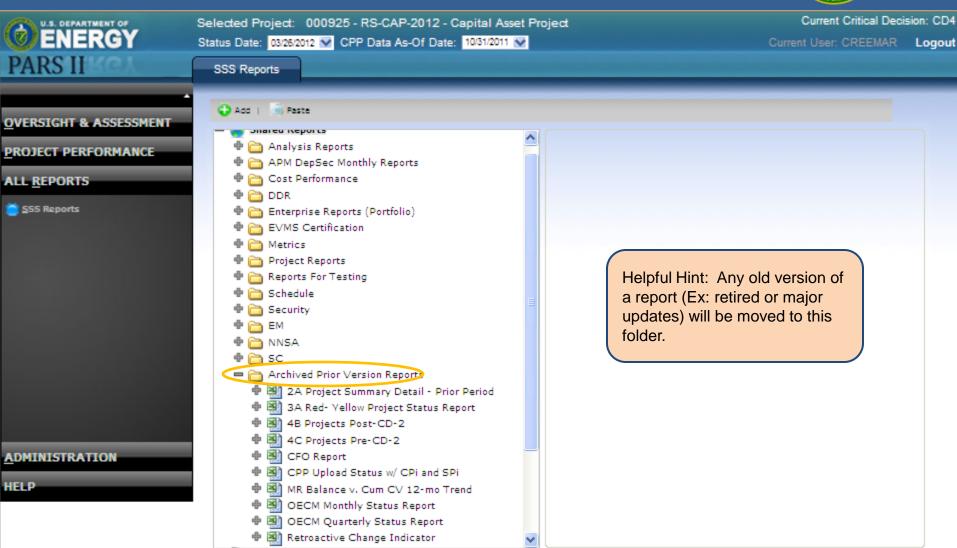
SSS Reports - EM, NNSA and SC





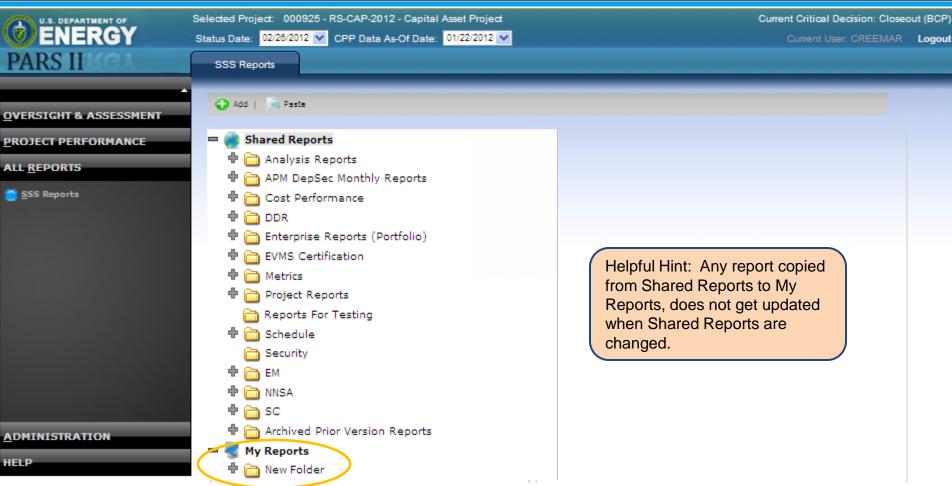
SSS Reports - Archived Prior Version





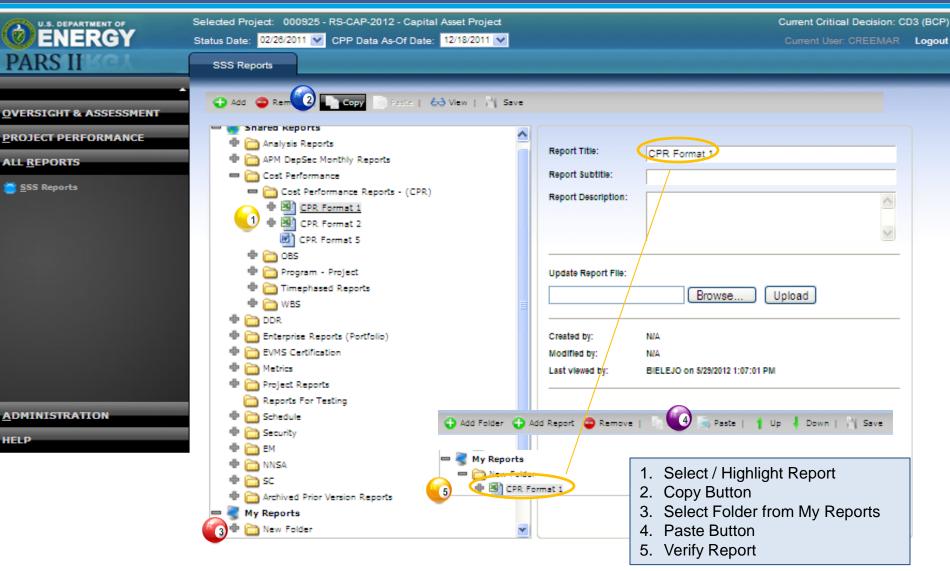
My Reports





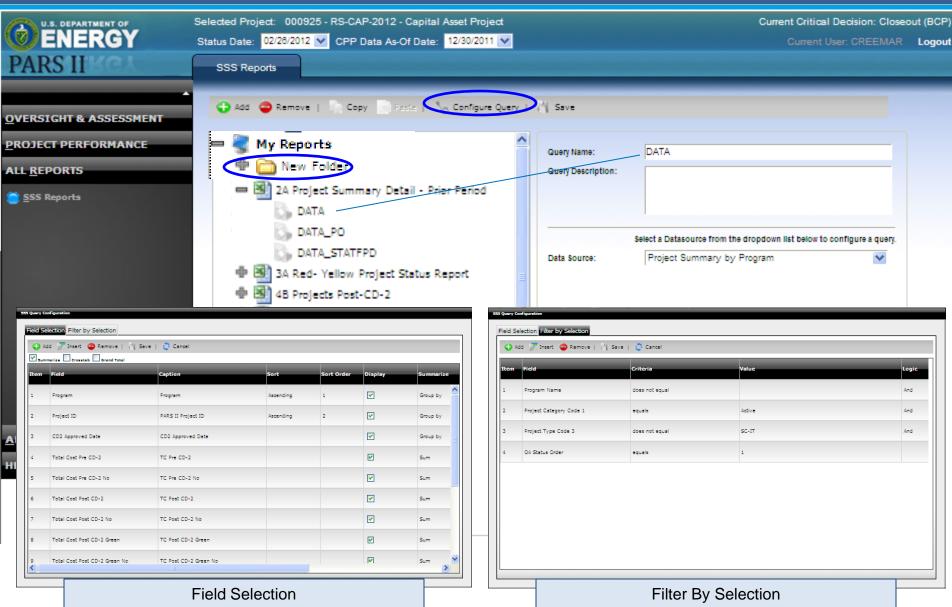
Copy / Paste Reports





Configuration Query





SSS Reporting - Data Sources



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U.S. DEPARTMENT OF ENERGY
PARS II

Selected Project: 000925 - RS-CAP-2012 - Capital Asset Project

Status Date: 02/26/2012 V CPP Data As-Of Date: 01/22/2012 V

Current Critical Decision: Closeout (BCP)

Current User: CREEMAR Lo

SSS Reports

WBS/OBS Matrix Data

OVERSIGHT & ASSESSMENT

PROJECT PERFORMANCE

ALL REPORTS

SSS Reports

Helpful Hint:

- Data Sources, as designed by the COTS vendor, are not based on screens but rather the commonality of data. The individual Data Sources used on a report can be confusing as data that appears on a screen may be contained within multiple Data Sources.
- The same Data Source may be used multiple times when creating a report based on required fields and filter criteria.
- The tying of this information often requires advanced Excel skills.
- Data sources have also been created specifically to solve the timeout issues on large reports.

	OA Datasources					
	Data Source	Description				
- 1	CAP Metric #1 and #2	Specially Designed Data Source for OECM Metrics and Monthly Reports				
	Critical Decision	Critical Decision (CD) Data By Project				
	Project Assignments	Data Source Identifies the Users Access Rights for Project Assignments				
	Project Attachments	Data Source That List All Project Attachments By Project				
	Project BCP	Baseline Change Proposal (BCP) Data By Project				
	Project Contact	Contacts And Certifications Data By Project				
	Project KPP Key Performance Parameter (KPP) Data By Project					
1	Project Monthly Status - FPD	FPD Monthly Status Data By Project				
ı	Project Monthly Status - OECM	OECM Monthly Status Data By Project				
П	Project Monthly Status - Program	Program Monthly Status Data By Project				
	Project Narrative	Similar To Project Attachments Data Source, Only Narrative Data				
	Project Overview	Provides Overall Project Status Data By Project				
	Project Performance Baseline	Combined Cost Values Of TPC, Funding, And CPP Data By Project				
Project Summary by Program Specially Designed Data Source For ART 2A Report		Specially Designed Data Source For ART 2A Report Summarized By Program				
	Project Timephased Funding	Timephased Funding Data By Project				
	Project/Program Definition	Project And Program Definition. The Same Data Elements Are Also Applied To All Other OA Data Sources				

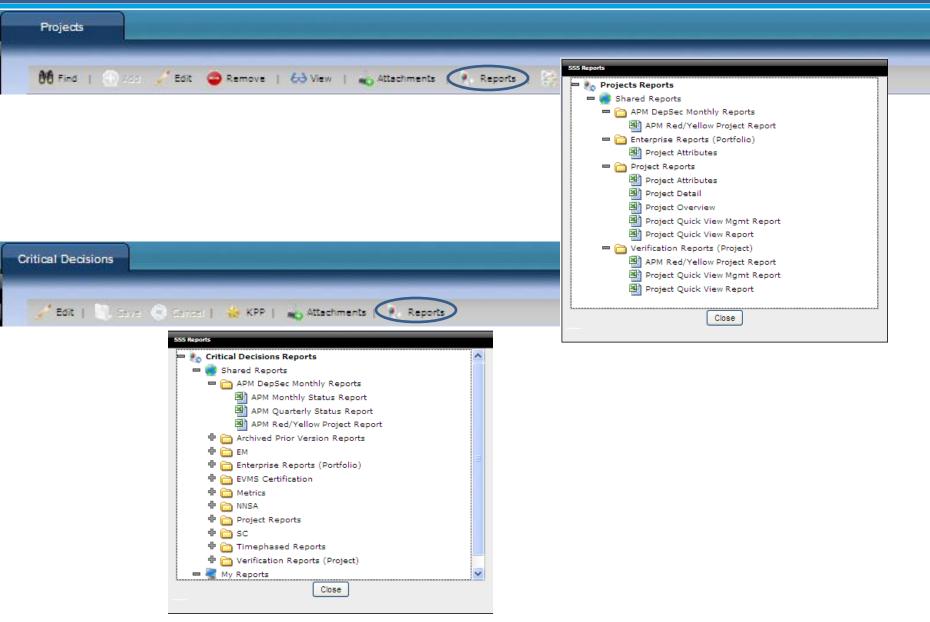
ı		CPP Data Datasources					
ı	Data Source	Description					
	Activity Predecessor Successor Detail	Activity Predecessor Successor Data from CPP Schedule Data					
	Activity Relationship	Activity Relationship Data from CPP Schedule Data					
ı	Contract Level Information	CPR Header Information Data by Project					
ı	Performance Data by OBS	Contractor Project Performance (CPP) Data by OBS					
ı	Performance Data by WBS	Contractor Project Performance (CPP) Data by WBS					
Ē	Performance Future Data by OBS	Timephased CPP Data with Prior Periods by OBS					
	Performance Future Data by WBS	Timephased CPP Data with Prior Periods by WBS					
	Schedule Count Distribution by Activity	Activity Schedule Count Distribution Data from CPP Schedule Data					
ı	Schedule Data by Activity	Activity Schedule Data from CPP Schedule Data					
Ī	Timephased Cost and Schedule by OBS	Timephased Schedule and Cost CPP Data Combined by OBS					
	Timephased Cost and Schedule by WBS	Timephased Schedule and Cost CPP Data Combined by WBS					
	Timephased Performance by OBS	Timephased CPP Data by OBS					
7	Timephased Performance by WBS	Timephased CPP Data by WBS					

WBS/OBS Matrix by Activity from CPP Schedule Data

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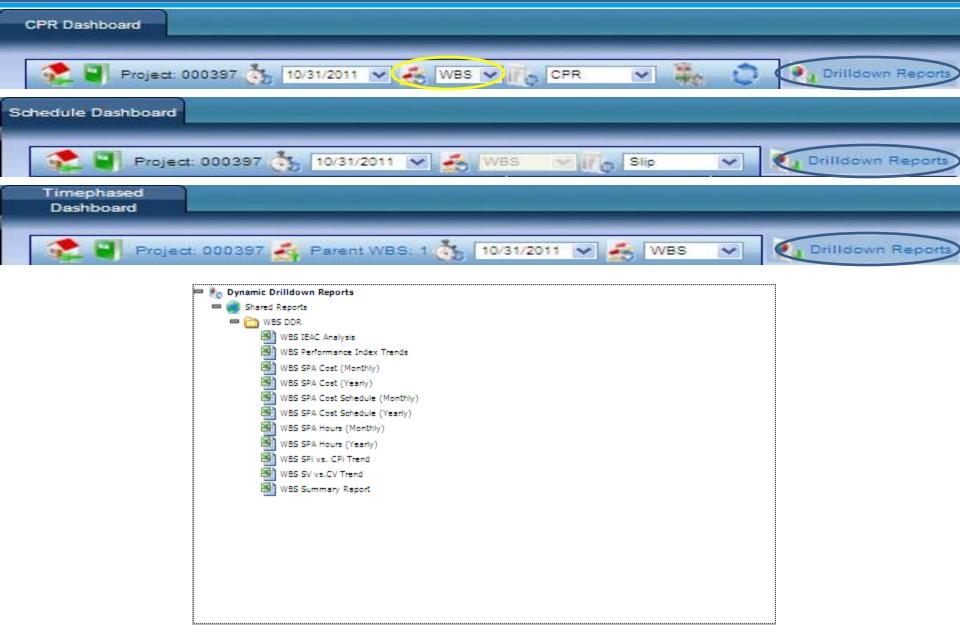
Reports Button per Module





Reports Button per Module



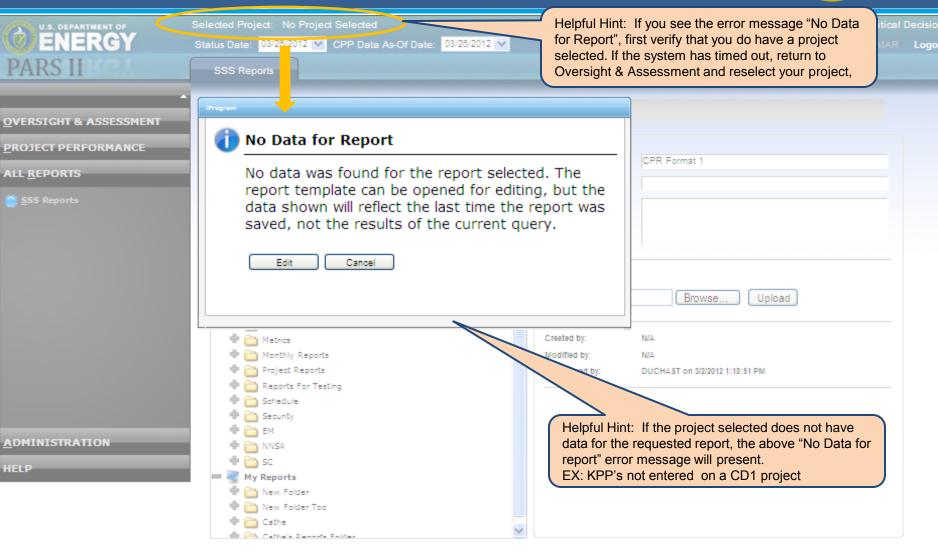


- What is the purpose of the report
- What fields/information should be displayed on the report
 - CD2 screen, FPD Assessment, etc.
 - CD4: WHICH ONE?
- What fields/information to be calculated on the report
- (Proposed) Report Title
- Report period
 - Status Date, Current or Prior Period
- Who are the Users of the report
- Is this a new report, or a modification to an existing report

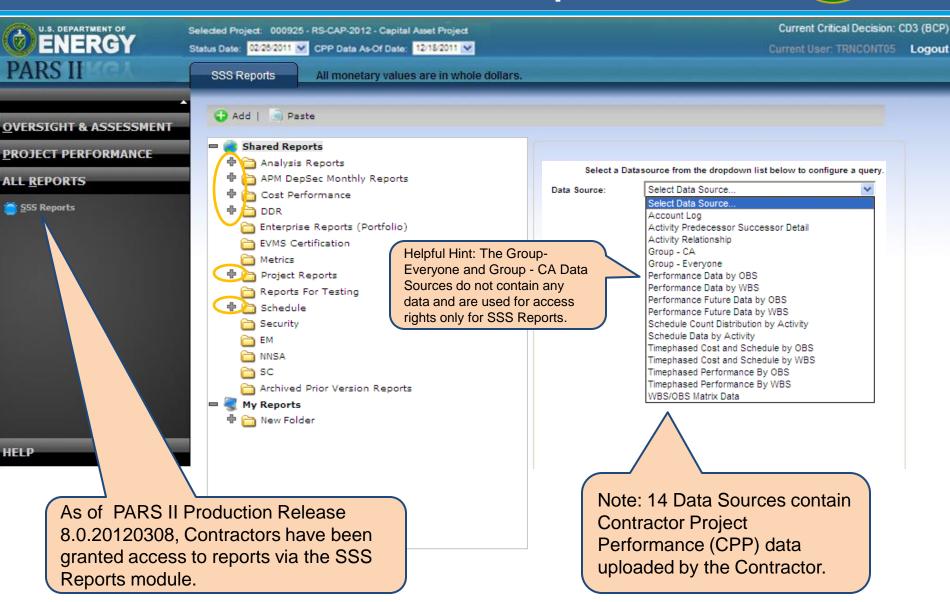
Note: All Custom Report requests should be coordinated with your Program.

SSS Reports - Error Message

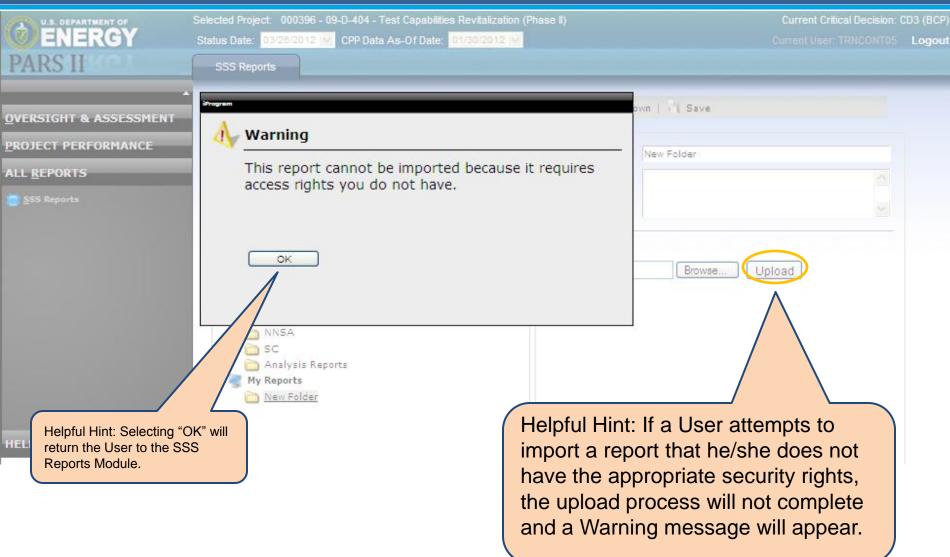














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- Shared Reports Cost Performance Cost Performance Reports - (CPR) I CPR Format 2 CPR Format 5 OBS CPR Schedule Integration Report OBS Cumulative Analysis Chart OBS Cumulative Variance Analysis M OBS IEAC Analysis OBS PM Summary OBS Performance Index Trends OBS SV% vs. CV% Ouad Chart Program - Project Management Reserve (MR) Log Project CPi vs. TCPi and ACi Project Favorable vs. Unfavorable Cost Vai Project Favorable vs. Unfavorable Schedule Project SPi vs. CPi Trend Project SV vs. CV Trend Project Summary Timephased Reports 🖶 🛂 Actual and Forecast Comparison Budgeted Cost Comparison Lifecvcle CPi/SPi Trends Performance Comparison Performance Analysis (WBS Level) Performance Index Trends (WBS Level) Wariance Analysis Cumulative (WBS Level) WBS CPR Schedule Integration Report MBS Cumulative Analysis Chart WBS IEAC Analysis WBS PM Summary
- OBS DDR OBS IEAC Analysis OBS SPA Cost (Monthly) M OBS SPA Cost (Yearly) OBS SPA Cost Schedule (Monthly) OBS SPA Cost Schedule (Yearly) OBS SPA Hours (Monthly) OBS SPA Hours (Yearly) OBS SPi vs. CPi Trend OBS SV vs.CV Trend OBS Summary Report Performance Index Trends (Current Selected OBS) Performance Index Trends (Current Selected WBS WBS IEAC Analysis 🖶 🗐 WBS SPA Cost (Monthly) WBS SPA Cost (Yearly) WBS SPA Cost Schedule (Monthly) WBS SPA Cost Schedule (Yearly) 🖶 🛂 WBS SPA Hours (Monthly) WBS SPA Hours (Yearly) MBS SPi vs. CPi Trend WBS SV vs.CV Trend WBS Summary Report
- □ APM DepSec Monthly Reports
 □ Verification Reports (Portfolio)
 □ Verification Reports (Project)
 □ APM Monthly Status Report
 □ APM Quarterly Status Report
 □ APM Red/Vellow Project Report
 □ APM Red/Vellow Project Report

🗕 🦳 Project Reports

Project Summary

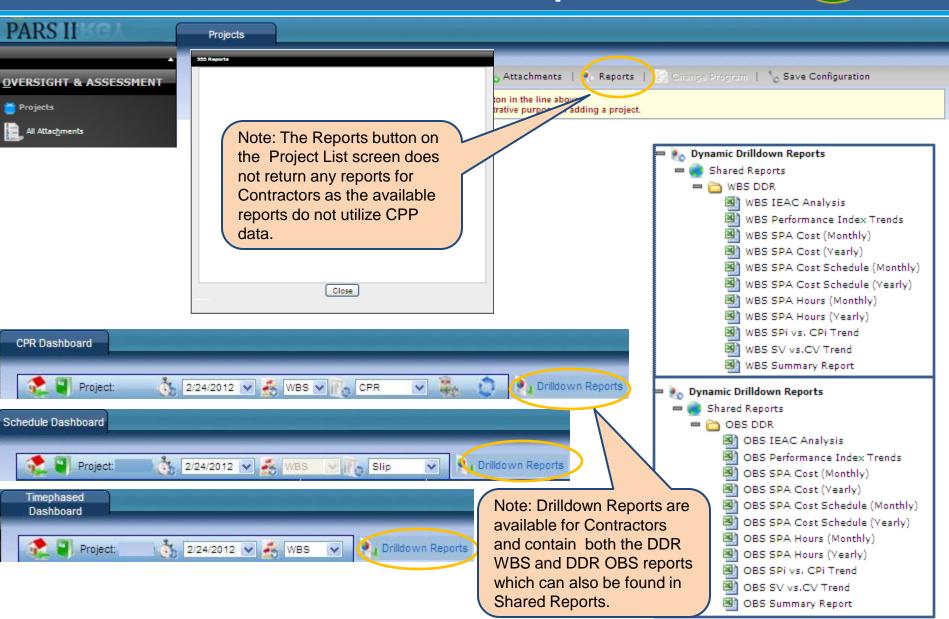
🗕 🦳 Schedule ANOVA Analysis Activity Comparison Activity Criticality and Float Analysis Activity Detail Report Activity Metrics 🖶 🞒 Activity Relationship Type Analysis Activity Shadowing Baseline to Current By Count ⊕

■ Critical Activity Critical Activity ETI Analysis Cumulative Activity Start and Finish Count 🖶 🛂 Elapse Time Index (ETi) Analysis Schedule Missing Logic (Activity Level) Schedule Slip Report 💳 🦳 Analysis Reports 🖶 🗐 Baseline Volatility - Past and Near-Term (F



🖶 🗐 Variance Analysis Cumulative (WBS Level)









PARS II Wrap-Up

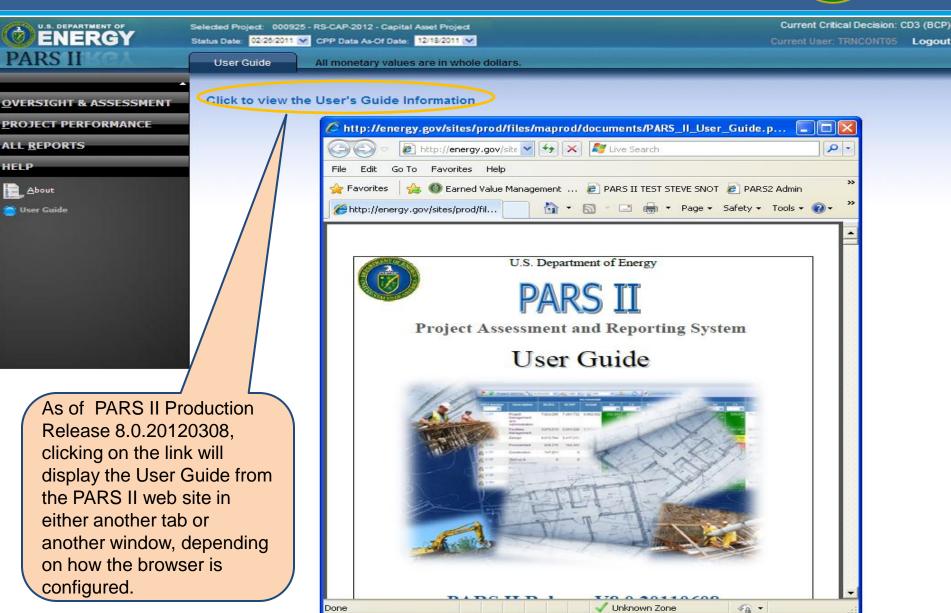




- Project Attributes
 - New Tabs
- Budget / Funding
 - AE Mod Profiles
 - CD2 Profile
- View/Edit Rights Per Project
 - Program View Access
 - Change from Edit to View rights for completed projects
- Report Security
 - Contractor's now have access to all EV Reports for their project portfolio
- Timephasing of OA Data
- Numerous anomaly corrections
 - Updated Date / Updated By
 - "Planned" Planned Dates carry-over from BCPs to CDs
- Search screen enhancement for Project Organization (Level 2)

Help Module - User Guide





The Helpdesk does not have the authority to change OA data within PARS II. Requests/Questions submitted are forwarded to APM.

- Password Reset
- CPP Upload Issues
- Workstation Configuration
- Project Find/Search

The more information that you provide, the faster the issue can be resolved.

- The hours of operation for the PARS II Helpdesk are 8am-5PM, M-F.
- Email I-Manage.Eas@hq.doe.gov
- 301-903-2500 (option 4, then option 5)
- 866-834-6246 (option 4, then option 5)

PARS II User Guide

http://energy.gov/sites/prod/files/maprod/documents/PARS_II_User_Guide.pdf

PARS II SOP (Standard Operating Procedures)

http://energy.gov/sites/prod/files/PARS_II_SOP_Version_1.1_2011_08_11.pdf

PARS II Change Request Form

http://energy.gov/sites/prod/files/maprod/documents/PARS_II_Change_Reque st_Form.pdf

PARS II Training Schedule

http://energy.gov/sites/prod/files/PARS_II_Training_Schedule_1.pdf

PARS II Training Course Registration

http://energy.gov/management/pars-ii-course-registration

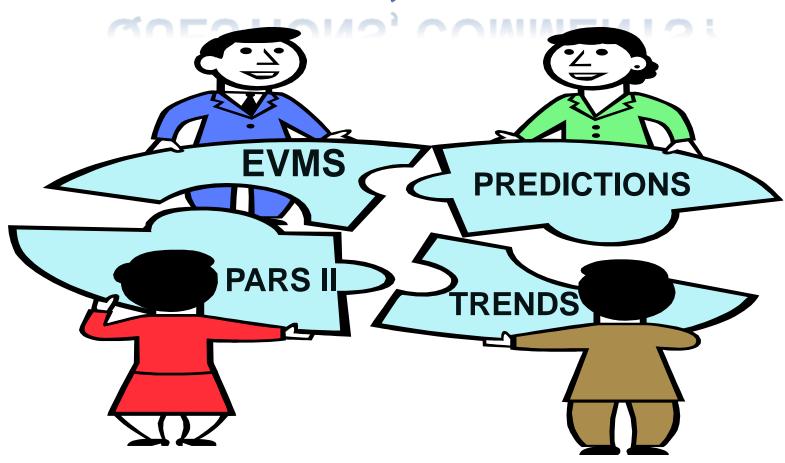


PARS II Overview





QUESTIONS, COMMENTS?



- Acronyms
- DOE EVMS Gold Card
- ANSI /EIA-748 Guidelines Business & Management Processes
- DOE EVMS Risk Assessment Matrix and Instructions
- Conducting An EVMS Data Trace
 - Organization
 - Scheduling
 - Management & Analysis
 - Budgeting
 - Change Management
 - Material Management
 - Subcontract Management

Acronyms



AC	Actual Cost	DCMA	De
ACI	Actual Cost Index	DDR	Dy
Act Dur	Actual Duration	DFPD	De
ACWP	Actual Cost of Work Performed	DNFSB	De
AE	Acquisition Executive	DoD	De
AFDATE	Actual Finish Date	DOE	De
ANSI	American National Stds Institute	EAC	Es
APM	Office of Acquisition and Project Management (MA60)	ECP	En
ARRA	American Recovery and Reinvestment Act	ECWR	Es
ASDATE	Actual Start Date	EERE	Of
AUW	Authorized Unpriced Work	EFCOG	En
BAC	Budget At Complete	EFDATE	Ea
ВСР	Baseline Change Proposal	EIA	Ele
BCWP	Budgeted Cost for Work Performed	EIR	Ex
BCWR	Budgeted Cost of Work Remaining	EIS	En
BCWS	Budgeted Cost for Work Scheduled	EM	Of
вом	Bill of Material	EMAAB	En
B-Finish	Baseline Finish Date	EM-C	Of
B-Org Dur	Baseline Original Duration	EM-L	Of
3-Start	Baseline Start Date	EPA	En
CA	Control Account	ESAAB	En
CA	Corrective Action	ESDATE	Ea
CAD	Computer-aided Design	ESSOP	ΕV
CAM	Control Account Manager	ETC	Es
CAP	Corrective Action Plan	ETI	Ela
CAR	Corrective Action Request	EV	Ea
CBB	Contract Budget Base	EVM	Ea
CBR	Congressional Budget Request	EVMS	Ea
CD	Critical Decision	FAQ	Fre
CFA	Civilian Federal Agency	FAR	Fe
CIO	Continuous Improvement Opportunity	FE	Of
СМ	Corrective Measure	FPD	Fe
CO	Contracting Officer	FPM	Fe
СР	Contract Price	FS	Fir
CPI	Cost Performance Index	FY	Fis
CPP	Contractor Project Performance	GAO	Go
CPR	Cost Performance Review	GFE	Go
Cum	Cumulative	GFM	Go
CV	Cost Variance	GL	Gι
CWBS	Contract Work Breakdown Structure	HQ	He
D&D	Decontamination & Decommissioning	ICE	Inc

DCMA	Defense Contract Management Agency
DDR	Dynamic Drilldown Report
DFPD	Deputy Federal Project Director
DNFSB	Defense Nuclear Facilities Safety Board
DoD	Department of Defense
DOE	Department Of Energy
EAC	Estimate At Completion
ECP	Engineering Change Proposal
ECWR	Estimated Cost of Work Remaining
EERE	Office of Energy Efficiency and Renewable Energy
EFCOG	Energy Facilities Contractors Operating Group
EFDATE	Early Finish Date
EIA	Electronic Industries Alliance
EIR	External Independent Review
EIS	Environmental Impact Statement
EM	Office of Environmental Management
EMAAB	Environmental Management Acquisition Advisory Board
EM-C	Office of Environmental Management - clean up
EM-L	Office of Environmental Management - line item
EPA	Environmental Protection Agency
ESAAB	Energy Systems Acquisition Advisory Board
ESDATE	Early Start Date
ESSOP	EVMS Surveillance Standard Operating Procedure
ETC	Estimate To Complete
ETI	Elapsed Time Index
EV	Earned Value
EVM	Earned Value Management
EVMS	Earned Value Management System
FAQ	Frequently Asked Questions
FAR	Federal Acquisition Regulations
FE	Office of Fossil Energy
FPD	Federal Project Director
FPM	Federal Program Manager
FS	Finish-Start
FY	Fiscal Year
GAO	Government Accountabilty Office
GFE	Government Furnished Equipment
GFM	Government Furnished Material
GL	Guideline
HQ	Headquarters
CE	Independent Cost Estimate

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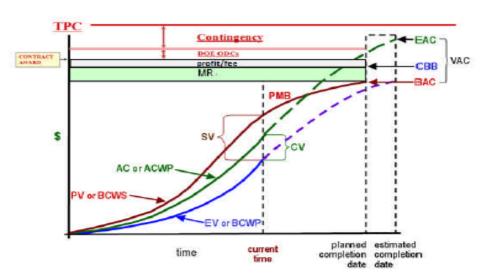
Acronyms



ICR	Independent Cost Review
ID	Identification
IDIQ	Indefinite-Delivery Indefinite-Quantity
IEAC	Independent Estimate At Complete
IMS	Integrated Master Schedule
Inc	Incremental
IPL	Integrated Priority List
IPR	Independent Project Review
IPT	Integrated Project Team
KPP	Key Performance Parameter
LCC	Life Cycle Cost
LFDATE	Late Finish Date
LOE	Level of Effort
LRE	Latest Revised Estimate
LSDATE	Late Start Date
LM	Office of Legacy Management
MA	Office Of Management
MIS	Management Information Systems
MOD	Contract Modification(s)
MR	Management Reserve
N/A	Not Applicable
NA	National Nuclear Security Administration
NDIA	National Defense Industry Association
NE	Office of Nuclear Energy
NEPA	National Environmental Policy Act
NR	Not Reporting
OA	Oversight and Assessment (or O&A)
OBS	Organization Breakdown Structure
ODC	Other Direct Costs
OECM	Office Of Engineering And Construction Management
ОМВ	Office of Management and Budget
OPC	Other Project Cost
Org Dur	Original Duration
ORR	Operational Readiness Review
ОТВ	Over Target Baseline
OUO	Official Use Only
PARS II	Project Assessment And Reporting System II
РВ	Performance Baseline
PBS	Program Baseline Summary
PDS	Project Data Sheet

PDRI	Project Definition Rating Index
PED	Project Engineering and Design
PM	Project Management
РМВ	Performance Measurement Baseline
PMSO	Project Management Support Office
РО	Program Office
POC	Point of Contact
PP	Planning Package
PV	Planned Value
RAM	Responsibility Assignment Matrix
RCA	Root Cause Analysis
REA	Reasonable Equitable Adjustment
Rem Dur	Remaining Duration
RFC	Review for Cause
ROD	Record Of Decision
ROP	Rest of Project
RW	Office of Civilian Radioactive Waste Management
RYG	Red Yellow Green
SAE	Secretarial Acquisition Executive
SC	Office of Science
SLPP	Summary Level Planning Package
SOP	Standard Operating Procedures
sow	Statement of Work
SPA	Schedule, Performance, Actuals
SPI	Schedule Performance Index
SSOM	Standard Surveillance Operating Manual
SSS	Sort, Select and Summarize
sv	Schedule Variance
TEC	Total Estimated Cost
TCPI	To Complete Performance Index
TPC	Total Project Cost
TRA	Technical Readiness Assessment
UB	Undistributed Budget
UNCI	Unclassified Controlled Nuclear Information
VAC	Variance At Complete
VAR	Variance Analysis Report
WAPA	Western Area Power Administration
WBS	Work Breakdown Structure
WP	Work Package
WR	Work Remaining
1	

DOE EVMS GOLD CARD Rev.5



PERFORMANCE BASELINE COMPONENTS

(Performance Baseline must clearly document scope/KPPs, TPC and CD-4 date)

AUW = Authorized Unpriced Work (contractually approved, but not yet negotiated)

Control Account (includes AUW) = WPs + PPs

= Contract Budget Base = PMB + MR

CP = Contract Price = CBB + profit/fee

CBB

MR = Management Reserve is held by contractor (Contingency is held by DOE)

PB = Performance Baseline (TPC) = CP + Contingency + DOE ODC

PMB = Performance Measurement Baseline = CAs + UB + SLPPs

MD = Performance Measurement baseline = CAS + OB + SLPPS

PP = Planning Package (far-term activities within a CA)

SLPP = Summary Level Planning Package

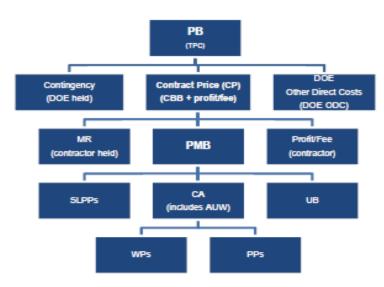
UB = Undistributed Budget (activities not yet distributed to CA)

/P = Work Package (near-term, detail-planned activities within a CA)

EVMS BASIC COMPONENTS*

AC = Actual Cost	= AC\	/P = Actua	al Cost of Work Performed
EV = Earned Value	= BC\	P = Budg	eted Cost of Work Performed
PV = Planned Value	= BC\	/S = Budg	eted Cost of Work Scheduled
BAC = Budget at Completion	= ΣB	WS = Sum	of Budgeted Cost of Work Scheduled

^{*} For analysis purposes, AC, EV and PV calculations may be based on various time periods, e.g., monthly, cumulative, last 3 months from CD-2 or BCP or internal replan.



VARIANCES*

CV = EV - AC = BCWP - ACWP = Cost Variance
SV = EV - PV = BCWP - BCWS = Schedule Variance
CV% = (EV - AC) / EV = (BCWP - ACWP) / BCWP = Cost Variance (%)
SV% = (EV - PV) / PV = (BCWP - BCWS) / BCWS = Schedule Variance (%)
VAC = BAC - EAC = Variance at Completion

VAC% = VAC / BAC OVERALL STATUS

 % scheduled
 =
 PV_{oum} / BAC
 =
 BCWS_{oum} / BAC

 % complete
 =
 EV_{cum} / BAC
 =
 BCWP_{oum} / BAC

 % budget spent
 =
 AC_{cum} / BAC
 =
 ACWP_{cum} / BAC

 Work Remaining (WR)
 =
 BAC - EV_{cum}
 =
 BAC - BCWP_{cum}

PERFORMANCE INDICES*

CPI = EV / AC = BCWP / ACWP = Cost Performance Index
SPI = EV / PV = BCWP / BCWS = Schedule Performance Index
TCPI_{BAC} = WR / (BAC - ACWP_{cum}) = BAC-based To Complete Performance Index
TCPI_{FAC} = WR / (EAC - ACWP_{cum}) = EAC-based To Complete Performance Index

COMPLETION ESTIMATES

EAC = BAC / CPI_{cum} = Estimate at Completion (general)

EAC_{CPI} = AC_{cum} + WR / CPI_{cum} = Estimate at Completion (CPI)

EAC_{composite} = AC_{cum} + WR / (CPI_{cum} · SPI_{cum}) = Estimate at Completion (composite)

ETC = EAC - AC_{cum} = Estimated to Complete

ANSI /EIA-748 Guidelines and Organization Process Alignment



2-5e	254	2.50		7-5a		REVISIONS		16:7	3.46	1	3 46	Т	2.44		4		2-4a		ANALYSIS	2-3f		7-36		2-3d	2.30		2-3b		2-3a	ACCOUNT	2-2	2-21		2-2h		2-28	2-2f	87.7	2 20	2.24	2-2c	2-2b		2-2a	PLANNING	2-10	2-1d	100	07.7		16			_		
Document changes to PMB	Present all but authorized budget changes	Control retroactive changes	Reconcile budgets with prior budgets	manner	Incorporate authorized changes in timely	REVISIONS AND DATA MAINTENANCE		CHOUSE AND	Nevise EAC based on performance data,	E A SAL SELECTION OF STREET	implement management actions as result of	with motoropological parts	shru WRS (ORS for many	Summariae data elements and variances	Identify and explain indirect cost variances	Explain significant variances	identification of CV and SV	Control account monthly summary,	ANALYSIS AND MANAGEMENT REPORTS	time; full accountability of material	control accounts: EV measurement at right	Accurate material cost accumulation by	Identify unit costs, equivalent units costs or	Record indirect costs	aflocation	Summarize direct costs into OBS without	allocation	Summarize direct costs into WBS without	Record direct costs from accounting system	ACCOUNTING CONSIDERATIONS	Reconcile program target cost goal with sum of all internal budgets	undistributed budget	Identify management reserve and	element	Establish overhead budgets by organization	Identify and control LOE budgets	packages sum to control acct	All work package hurleets & planning	administration and a section as	authorized budgets	Establish time-phased budget	milestones, products, etc.	Identify interim measures of progress, i.e.	Sequential scheduling of work	PLANNING, SCHEDULING & BUDGETING	Integrate WBS & OBS, create control accounts	Identify organization/function for overhead	subsystems with WBS and OBS	Organization integration of EVMS	Define authorized work	ATION		Guidelines	ANSI/EIA-748	8	
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Exercise 1: EVMS Risk Matrix, pg 2 of 7



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DOE EVMS RISK ASSESSMENT MATRIX

EVMS RISK MATI		DATE:	ANALYST:	
CONTRACTOR:		PMSO:	PROJECT:	
RISK	HIGH	MEDIUM	LOW	RISK LEVEL
PROJECT PHASE	PRIOR to CD-3: Organizing, Scheduling, Work/Budget Authorization	EARLY to MID CD-3: Accounting, Material Mgmt, Change Incorporation	LATE CD-3: Managerial Analysis, Change Incorporation	
PM EVM EXPERIENCE	< 2 YRS Organizing, Scheduling, Managerial Analysis	2 – 5 YRS Scheduling, Managerial Analysis	> 5 YRS Managerial Analysis	
CONTRACT BUDGET BASE VALUE	≥ \$100M Work/Budget Authorization, Accounting, Managerial Analysis	\$50M ≤ \$100M Work/Budget Authorization	\$20M < \$50M Scheduling	
PRIME WORK REMAINING %	> 50% Managerial Analysis, Change Incorporation	10 - 50% Managerial Analysis, Change Incorporation	< 10% Accounting, Material Mgmt	
SUBCONTRACTOR WORK REMAINING %	>50% Work/Budget Auth, Scheduling, Subcontract Mgmt, Managerial Analysis	10 – 50% Work/Budget Auth, Scheduling, Subcontract Mgmt, Managerial Analysis	<10% Accounting, Subcontract Management	
MATERIAL REMAINING %	>30% Work/Budget Auth, Scheduling, Accounting, Material Management	15 – 30% Accounting, Material Management	< 15% Material Management	
MANAGEMENT RESERVE REMAINING %	< 5% BCWR Work/Budget Authorization, Change Incorporation	5 – 10% BCWR Work/Budget Authorization, Change Incorporation	> 10% BCWR Change Incorporation	
BASELINE RESETS	2 OR MORE Work/Budget Authorization, Change Incorporation, Scheduling	1 Work/Budget Authorization, Organizing	NONE Organizing	
SV%, CV%, OR VAC%	>10% Accounting, Indirect Mgmt, Managerial Analysis	5 - 10% Indirect Management, Managerial Analysis	< 5% Managerial Analysis	
MISSING SCHEDULE LOGIC	>15% Scheduling, Managerial Analysis	5 – 15% Scheduling	<5% Scheduling, Work/Budget Authorization	
BASELINE VOLATILITY	> 15% Change Incorporation, Accounting	5 - 15% Change Incorporation, Accounting	< 5% Managerial Analysis	
CURRENT PERIOD CHANGES	>0% Change Incorporation	0% (NEGLIGIBLE) Change Incorporation	BLANK NA	
DATA VALIDITY	CONTINUAL CONCERNS Managerial Analysis	PERIODIC CONCERNS Managerial Analysis	NO CONCERNS NA	
ONGOING SYSTEMS ISSUES	MULTIPLE UNRESOLVED Affected Processes:	SINGLE UNRESOLVED Affected Processes:	NONE NA	
TIME SINCE LAST REVIEW	>12 MO. All Process Groups	6 -12 MO. Processes Not Yet Reviewed	< 6 MO. Follow All Above	

Exercise 1: EVMS Risk Matrix, pg 3 of 7



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INSTRUCTIONS FOR EVMS RISK ASSESSMENT MATRIX

COMPLETE ALL AREAS IN BLUE.

PROJECT PHASE: Determine current phase of the project: Prior to CD-3, Early to Mid CD-3, Late CD-3 (less than 6 months to CD-4). See PARS II Project Overview Report.

PM EVM EXPERIENCE: How many years of EVM experience does the Contractor's Program Manager have?

CBB VALUE: What is the value of the CBB (Performance Measurement Baseline plus Management Reserve) for the project? See PARS II Project Overview Report.

PRIME AND SUBCONTRACTOR WORK REMAINING PERCENTAGE: If the CPR data in PARSII is not segregated by 'prime' vs 'subcontractor', then obtain the data from the contractor to determine value of prime vs subcontractor work remaining.

If the data reported in the PARS II uses a WBS structure that allows visibility into prime vs subcontractor effort, then from the BAC and BCWPcum for each (prime, subcontractor), calculate the

BCWR using the following formula: Budgeted cost of work remaining, BCWR = BAC-BCWPcum Lastly, calculate % of BCWR for each as compared to the total effort remaining. (Subcontractor % plus prime % equals 100%).

MATERIAL REMAINING %: Of total original material budget, what is the percentage of remaining material budget? (Material BAC – Material BCWPcum)/ Material BAC Information is available from the contractor's EVMS, either from a) a contractor provided report with a code to designate material cost, or b) by obtaining \ the entire CPR by element of cost. Note: The contractor should always be able to produce this (GL 9) and we have access to this data per DOE O 413.3B and FAR 52.2.

MANAGEMENT RESERVE REMAINING %: Calculate MR remaining as a percentage of budgeted cost of work remaining (BCWR). MR / (BAC-BCWPcum)

BASELINE RESETS: Determine the number of times the baseline has been reset since inception, i.e. variances were eliminated by rebaselining actions. Use the number of external BCPs and single point adjustments (internal BCPs).

SV%, CV%, AND VAC%. Calculate the cum SV%, CV%, and VAC% based on the most recent CPR data and select highest. For high dollar projects, using the 6 or 12 month cum may be more indicative of risk. See PARS II Project Summary Report.

MISSING SCHEDULE LOGIC: Use Schedule Missing Logic (Activity Level) report from PARS II to determine % of missing logic

of unresolved CARs escalated, if system compliance in jeopardy, or if system compliance has been revoked.

BASELINE VOLATILITY: Use the Baseline Volatility - Past and Near-Term (PMB Level) report from PARS II (based on end of period Format 3 baseline plan for next 6 periods) to determine % average percent change of PMB over a six month period (based on last 12 months of data). (choose greater of absolute values of min/max and first/last).

CURRENT PERIOD CHANGES: Use the Baseline Volatility – Past and Near-Term (PMB Level) report from PARS II to determine the extent of current period changes over the past 6 months. Choose the largest monthly value from the past six months.

DATA VALIDITY: Using the PARS II EV Data Validity (WBS Level) report, review the monthly reports to determine if the validity concerns are (1) continual, periodic, or negligible, and (2) explainable or caused by process issues.

ONGOING SYSTEM ISSUES: Looking at the open EVM-related CARs from previous reviews, how many systemic issues are still unresolved – Multiple, Single, or none? Consider the number

Type affected processes into the pink block spelled exactly as they are in this list: Organizing, Scheduling, Work/Budget Authorization, Accounting, Indirect Management, Management and Analysis, Change Incorporation, Material Management, Subcontractor Management.

TIME SINCE LAST REVIEW: How long has it been since this project was last reviewed under System-Level Surveillance? DOE O 413.3B requires at least every 24 months. If it has been more than 12 months or is a new contract never reviewed, rate this element as high risk and consider this program/contract for review for all process groups when prioritizing projects for the Annual EVMS System Schedule. Likewise, if it has been 6 to 12 months since last reviewed, then rate this element as moderate risk and consider all processes not yet reviewed as moderate risk.

Conducting An EVMS Data Trace

- One of the objectives of a surveillance review is to ensure traceability throughout the system.
- The following slides provide some examples of traces that should be conducted for selected work packages or activities associated with work scope, authorization and responsibilities. The guideline(s) that may relate to the trace are provided in parentheses.
- This list is intended as a guide only and is not all-inclusive.
- If any inconsistencies or anomalies are apparent, they are to be addressed in Corrective Action Requests as appropriate.
- When conducting traces, you should document your evidence and attach examples where possible.



	ORGANIZATION
Guideline	Data Trace Method
1	Determine which control account contains the trace item by reviewing the Contract Work Breakdown Structure (CWBS) and CWBS dictionary. Ensure that the CWBS and CWBS dictionary adequately define the contractual effort to be accomplished within this control account. Annotate the CWBS and CWBS dictionary pages to indicate the contract line item and end item elements that relate to this control account.
2, 4	Review the Responsibility Assignment Matrix (RAM) to locate the control account that contains the trace item. Ensure that this control account is assigned to a responsible organization element that is consistent with the effort to be accomplished. Annotate the RAM to indicate that the control account was developed at the intersection of the CWBS to the organizational structure and that the CWBS was extended down to the control account level.
3, 22, 26, 27	Review the work authorization documents for the control account that contain the trace item. Verify that the organization assigned in the RAM, is the responsible organization in the work authorization documents. Ensure that the work authorization documents are approved and signed by the responsible functional managers designated in the RAM. Ensure that the work authorization and CWBS definitions of the effort to be accomplished within the control account are consistent. Provide the control account work authorization documents as exhibits.
1	Select sample from Statement of Work (SOW) and verify its inclusion in the WBS dictionary and vice versa.

Conducting An EVMS Data Trace - Scheduling



	SCHEDULING
Guideline	Data Trace Method
	Review control account/work package schedules. Ensure that the
6	scheduled dates on the authorization document for the control account
	are the same as the dates on the detailed plans.
6, 7	Confirm that the schedule contains all contractual activities.
6	Accomplish a vertical schedule trace which shows the flow from these
0	schedules through the intermediate schedules to the master schedules.
	Accomplish a horizontal trace which shows that the appropriate control
6	accounts and work packages are logically linked (use network schedules
	if available).
	If appropriate, confirm the identification of work progress and forecast
7 72	of completion dates. Check that the CAM's status (as shown on the
7, 23	status turn-around document) has been reflected on the revised
	schedule.



	MANAGEMENT and ANALYSIS
Guideline	Data Trace Method
16, 22	Ensure that earned value is being claimed in the same manner in which it was planned. For example, if an earned value technique of 0-100% is used, there should be no interim BCWP claimed.
27	Ensure that any EAC reported reflects information to date. Check that cumulative variances are either explained and a corrective action plan is in place or the variance is reflected in the EAC.
27	Check EAC amounts for completed control accounts or work packages and ensure that the ACWP does not exceed the EAC (should be equal).
23, 26	 Review variance analysis reports to ensure the following Reasons are adequately explained (i.e. it does not simply say that there was a variance) Impact is identified, how it affects other control accounts and whether it affects the program overall Corrective action or recovery plan is identified and implemented Analysis is approved at a higher level than it is prepared

Conducting An EVMS Data Trace - Budgeting



	BUDGETING
Guideline	Data Trace Method
8, 10	Review the Control Account Planning sheets for the control account that contains the items. Confirm that these plans reflect the way in which work is to be done, that there is an appropriate number of work packages verses planning packages, and that the planning packages are neither too general nor too large in scope, value, and duration.
9, 10, 11	Review control account documentation and internal reports as they pertain to the trace items. Ensure that the sum of the planning package budgets plus the work package budgets equals the control-account budget. Ensure that the planning packages have their own budget values and that there are adequate procedures for converting a planning package into a work package.
8	Review control account planning sheets and other performance measurement reports for the control account that contains the trace item. Determine how BCWS was time-phased and established. Determine if these budgets were established in a manner which is consistent with the method used for material accounting (if applicable).
15, 29	Review the budget information in the Work Authorization documents, the RAM, and the internal performance measurement reports to ensure that they are reconcilable. Then check that the amounts on internal Cost Performance Report are consistent with the external report being forwarded to the Government.
9	Select a sample of control account plans and ensure that budget is broken down by significant cost elements (labor, material, ODC etcetera) as appropriate.
12	Review LOE content of control account budgets to ensure it is only applied where appropriate. If possible obtain a summary of LOE accounts from the contractor.
14	Obtain MR and UB logs and trace from entry in logs to location of transfer. Also reconcile with CPR amounts.

Conducting An EVMS Data Trace - Change Management



	CHANGE MANAGEMENT
Guideline	Data Trace Method
14, 28, 29, 32	Review change request documents to ensure that traceability exists between the control account(s), change requests, MR, UB as appropriate (including current budget trace to original budget).
28, 30	Approval dates on change request documentation should be in advance of the period of the proposed change. This needs to be in accordance with whatever the system description says about "freeze periods" for changes, e.g. current period.
28	Check the cycle time to incorporate changes into control account plans from submittal, approval to incorporation. Timeliness is important because for open work packages, changes are to be incorporated into the baseline for future activities only (i.e. beyond the current period.) Changing BCWS in the current period is inappropriate.

Conducting An EVMS Data Trace - Material Management



MATERIAL MANAGEMENT	
Guideline	Data Trace Method
16, 22	Select a material item for each type of material and trace its flow through the procurement cycle. This should include the bill of materials, purchase orders, billing, issuing from inventory types of documentation. Ensure that material items are being tracked from control account authorization to completion.
9	Review how budgets including scrap and attrition values were established. Check to see that BCWP is being claimed in the same manner in which it was planned.
27	Review how the material budgets are time-phased to ensure it is consistent with the requirements of the system description and how the work is being performed
22, 23	Review internal reports that identify initial material quantities and then review documents provided to CAM to assess actual usage etc. Check variance analysis reports to determine whether price and usage variances are separated for managerial analysis.
9	If applicable, locate the trace item in the bill of material (BOM) and/or purchase order. Check for consistency and determine how total budget values were established.
12	Establish the value of the material and how much is being claimed as LOE. Generally only low-value material should be claimed as LOE.
27	Ensure that commitment values for material and actual material costs are incorporated into the EAC in a timely manner.

Conducting An EVMS Data Trace - Subcontract Management

SUBCONTRACT MANAGEMENT	
Guideline	Data Trace Method
2	Ensure that the responsibility for subcontract management is identified
9, 10, 12	BCWS should be based upon identifiable milestones where possible and the use of LOE is minimized. Check to see how the subcontracted effort is planned and what earned value technique at attributed to measure performance.
6, 23	Ensure subcontractor schedules are vertically and horizontally integrated with prime's schedules.
9, 10	Check the process for tracking material issued from the prime to the subcontractor for work.
16, 22	Check for proper incorporation of subcontractor's data into the prime's system.
23	Verify the subcontractor's baseline and ensure that contract changes are incorporated in a timely manner.
27	Ensure that EAC includes subcontractor updates for actual costs, material values etc.